# THE PLACE OF VERSION IN OBSTETRICS

POTTER

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By

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*WITH 42 ILLUSTRATIONS*

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THIS BOOK IS DEDICATED

TO THE

"WOMAN IN TRAVAIL"

IN THE REVERENT HOPE THAT HER "HOUR" MAY BE SHORTENED, HER "ANGUISH" LESSENED, AND HER "JOY" MADE COMPLETE

# PREFACE

An account of the method of version described in this book, has already been published in several medical and obstetrical journals. It is the result of a gradual evolutionary development on my part, made possible by a large practice in one of the prolific regions of our city, together with association with many midwives who frequently sought my help.

Early in my practice version was employed only in complicated cases when it was a choice between a high forceps delivery or a version. Naturally the more I practiced turning the more expert I became. In the beginning I groped around for one foot and then for the other, first with my right hand and then with my left. I very soon gave up exerting pressure over the uterus from above realizing that this was unnecessary as well as being responsible for the arms of the child coming up over the head and other difficulties which I encountered. The more women I delivered, the more satisfied was I with their condition during the whole puerperium, and I found less morbidity and suffering, as the weeks and months went by. I gradually increased the indications and enlarged the field for the version operation and now, I can say that at least ninety per cent of my cases are delivered by version and my last 938 cases had no maternal mortality and a fetal mortality of 2.3 per cent, not counting macerated and dead feti, or babies whose cords did not show any pulsation when delivery was started.

The second stage of labor has been eliminated; the women have not suffered any of the pain usually consequent upon this stage; the vagina and perineum have not been subjected to long hours of stretching, which resulted in quick retraction so that relaxed and gaping outlets with protruding and falling bladders and rectoceles did not occur in my patients. Finally, I have been enabled to complete the delivery within an hour and still be fresh and ready for my other work.

I wish to thank Dr. Herman E. Hayd of Buffalo, who early

recognized the value of my work and encouraged and supported me, until it was recognized by the members of the Association of Obstetricians, Gynecologists and Abdominal Surgeons; and my friend, Dr. E. Gustav Zinke of Cincinnati, who after paying me a visit and seeing me deliver a number of women, was so favorably impressed, that he wrote a paper which he read before the Association endorsing my practice. I also wish to thank Dr. Hugh C. McDowell, for a number of years my assistant, who has also become very skillful in this method of delivery; and my anesthetist, Dr. Charles J. Reynolds, who has given chloroform for me many thousands of times, without a single accident, to whose vigilance and skill I owe much of the success of my work. I also wish to thank George Hare, who made the photographs, first enabling me to visualize the procedure; Mr. French, the artist, who contributed these beautiful drawings to this book, and all others who have worked with me and made it possible to present in book form this practice in midwifery, which if worthy, must be carried on by my followers in the interest of suffering women, but if found wanting, must soon be scrapped into "innocuous desuetude."

IRVING W. POTTER.

BUFFALO, NEW YORK, JANUARY 1, 1922.

# FOREWORD

The purpose in writing the following pages is to bespeak a wider employment of the operation of version—using this term as it is now generally understood by the medical profession—that is, the *internal podalic version* of obstetric literature.

From an experience extending over many years of practice, including thousands of personally conducted cases of labor, I have come to believe that it is justifiable to perform a version for the purpose of eliminating the second stage of labor, and relieving the woman of the pains and agonies of childbirth, since such a procedure in my hands has been attended by no increase of fetal mortality and has had a lessened maternal mortality and future morbidity. This conclusion does not seem to me to be an innovation in obstetric practice, but rather a logical advance and extension of a perfectly understood maneuver which has been made possible by the modern conception of asepsis with anesthesia.

When my practice and conclusions were first presented to the medical profession at large, I was met by persistent opposition and bitter criticism. Not only was my method condemned as unscientific and dangerous, but my records and statistics were regarded as doubtful and my personal good faith called in question. After a lapse of several years the attitude of the profession has been modified; my records have been accepted and my personal honesty acknowledged. Opportunity has been afforded to any one who wished to observe my method in actual practice, and a great many men, many of them distinguished in the profession, have paid me a visit. Some of those who formerly denounced me and my methods are now silent; others who began by occupying the position of the man from Missouri, are at present outspoken in their commendation of my practice; and a large number have made a study of the procedure, thereafter successfully applying it in their own work.

The assertion that my method could not and should not be taught to "the average obstetrician in any of the lying-in hospitals" has been disproved, and I no longer hesitate to say that any competent man can learn to perform this version safely and skillfully.

The impression which I have gained from my conversations with those who have visited me is, that very few men understand the technic or the advantages of a properly performed version. This ignorance is largely due, first, to an almost complete lack of technical instruction on this particular subject in the obstetric courses now given, even, in the foremost of our medical schools, and secondly, to an amazing inactivity and lack of initiative, not only in the general practitioner and obstetric specialist, but also in the university professors and postgraduate instructors who have charge of the teaching of midwifery.

Parturition is not a disease and this perhaps is the reason why it fails to elicit the same amount of interest the medical profession is wont to bestow upon appendicitis or cholecystitis. Yet as it is one of the most important of all the physiological functions of the body and the one upon which the continuance of the human race depends, it would seem to merit at least as much consideration as a disease to which only a relatively small percentage of this race is subject. The man who after many years of practice confines his attention solely to obstetrics is decidedly an exception, and wherever physicians are gathered together one is sure to hear such a remark as "I do not take confinement cases any more; it is too hard work and the pay is inadequate for the amount of time it takes, to say nothing of the responsibility."

No man worthy of a position in the medical profession works for "pay" alone, nor does he grudge his time, nor shirk the weight of responsibility. Nevertheless the "laborer is worthy of his hire," and the man who can bring to his work the greatest amount of ability, energy and kindly feeling is the one who will best serve his patient, and most truly exemplify the standards of the profession of which he is a member. Therefore, any advance in the practice of obstetrics, which will conserve the strength and well-being of the attendant, and shorten the amount of time necessary for the completion of a given

task, provided that safety and efficiency are in no way lessened or sacrificed, is worthy of consideration, even upon this ground alone. Surely obstetrics from every point of view is deserving of a much loftier place in the esteem of the medical profession and if the drudgery of its practice can be lessened it will be exalted to a higher place as a specialty than that which it has hitherto enjoyed.

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# THE PLACE OF VERSION IN OBSTETRICS

## CHAPTER I

### EARLY HISTORY OF VERSION

The practice of obstetrics is probably as ancient as the human race itself. In common with most other forms of medical science, its beginnings are shrouded in the mists which preceded the dawn of history. If we are justified in drawing conclusions from analogy with the lower animals we can reasonably suppose that difficult labors and serious and fatal birth accidents were not uncommon, even in a "state of nature," and that of all forms of surgery there are none more ancient than the attempts made to assist parturient women and expedite the earthly debut of the succeeding generation.

In the days when Hippocrates lived and worked, the practice of obstetrics already appears to have been attended with a good degree of learning and skill. Erudite scholars are still wrangling over the authenticity of the treatises on diseases of women and the management of labor, which have been attributed to the "Father of Medicine." But to us this question is not of paramount importance, for—spurious or not—these treatises were certainly written long before the days of Aristotle, and the descriptions which they furnish concerning the obstetric practices of that age are quite the oldest records on a subject, literally of the most vital importance, which we now possess.

Of the management of normal labor we are told practically nothing. No doubt all such cases were then—as for countless years before and since—in the hands of midwives. It was only when difficulties arose, and the life of mother or child hung in the balance that the aid of the male *accoucheur* was sought. Our Greek physician gives very exact directions regarding the course to be pursued in dealing with a bad presentation. If an arm or

leg prolapses, it is to be put back, and the body of the fetus so rotated that the head will present. The parturient woman is to be placed upon her back with the foot of the bed elevated and something placed beneath the buttocks to elevate them. On no account may she have any pillow under her head. The patient being duly arranged, the *accoucheur* proceeds to replace the undesired presenting part and to bring down the head. The exact technic of this cephalic version is not given, but it may be assumed that Greek obstetricians regarded anything but a head presentation as so abnormal as to be impossible of delivery. A dead fetus may be delivered in the same manner, or craniotomy and other mutilating operations carried out if more convenient, care being taken to prevent the mother being a witness to this tragic performance. Craniotomy on the living child is not mentioned as a possibility.

Buck tells us in his *Growth of Medicine* that podalic version was known to the ancients and is described by both Celsus and Aëtius. I have had no opportunity of examining any full text of Aëtius. Stewart McKaye, however, in a consideration of this author's writing on gynecology, says of "Chapter XXII: 'Parientli difficultatis causae.' Most of this chapter has been taken from Soranus (cc, lxii, lxiv.), and being lengthy, it would be useless to give a short abstract. The chapters, as we have had occasion to observe in dealing with Soranus, are among the most excellent that we have received from the ancients on obstetrics." Fletcher Churchill quotes Denman's *Introduction* (p. 345) to the effect that " 'We learn from Aëtius, who lived probably about the fifth century, that Philomenos, whose writings (except those preserved by Aëtius) are now lost, discovered a method of turning and delivering children by the feet in all unnatural presentations'."

Ingerslev credits Aëtius, or—"perhaps more justly Philumenos," his commentator—with being "the first to advise podalic version in the case of a head presentation. In the 23rd chapter 'de foetus extractione ac exsectione, Philumeni' is written that before resorting to embryotomy, if the head presents, turning and extraction by the feet should be attempted. * * * Aëtius was the last author who plainly mentioned podalic version, and with him the knowledge of this obstetric operation dis-

appears for a long time to come; a thousand years passed before —if we except scattered hints in medieval authors—Paré once more drew attention to it."

Alexander Lee's edition of the *Medicinae* of Celsus translates the twenty-ninth chapter of the seventh book under the caption *Method of Extracting a Dead Fetus from the Womb*:

"The duty of the physician by the introduction of his hand, is to turn the child either upon its head, or on its feet if it were placed otherwise. And if there be no other impediment, he lays hold of the hand or foot, and places it in a straighter position: for the hand being laid hold of turns it (the fetus) upon its head, and the foot, upon its feet * * * a child turned on its feet is easily extracted, for these being laid hold of it is easily brought away by the (physician's) hands alone."

I do not find that Celsus makes any reference to version in the delivery of a living child.

It therefore appears that our only real source of information concerning the practice of version among the ancients is the treatise on midwifery and gynecology written in the Second Century A.D. by Soranus of Ephesus. In this we are given detailed directions as to the best procedure in difficult and abnormal deliveries, and the reader cannot fail to be impressed with the amount of skill and the evidence of wide experience which the writer of this treatise displays.

"An abnormal position of the fetus may be corrected by the physician. When the child's head lies to one side, the physician may insert his left hand—it being well lubricated with oil—with the nails cut so as not to cause injury, and the fingers so held together as to form the hand into a point. This point—as the os uteri dilates—the physician should insert within the womb so as to turn the fetus by its means. The patient must lie on the opposite side; that is to say, if the child be at the left, she must lie on her right side; if the child be to the right, then must the mother be to the left, in either case her body must be backwardly inclined. When the child is too far in front, pressing against the abdomen, or if it is in the knee position, pressing against the os sacrum, or when deviation and perhaps engagement of the head occur, then the child must be first pushed back, and then turned into the proper position.

"When one hand presents, it must not be grasped and pulled upon by the physician. The finger-points of the physician must be pushed against the shoulder of the fetus, then the fetus should be pushed back, and the arm made to assume the correct position. If both hands present the physician's finger-points must be pressed against both shoulders of the child, the child forced back and the arms straightened and placed along the thighs, after which the head may be gently drawn out. In case the head chances to be very small it is only necessary to turn it into correct position and draw the child out with hands alone—very gently.

"If the deviation be lateral, as in a footling presentation, the physician must introduce his hand—the left is best—and turn the child. When but one foot presents this method cannot be used, as strangulation may occur. The surgeon's fingers must be pressed against the mother's perineum, in order to push the foot back into the uterus, stretch it, and place it beside the other foot. When both feet present—in which case one or both hands are bent backwards, the fetus must be pushed back and the hands placed in correct position. When the feet are spread apart in the uterus, they must be brought together, and placed in position at the os uteri.

"If there is a knee presentation the child must be forced back, the thighs made straight and the fetus extracted by the feet. When the breech precedes the fetus must be pushed back, the thighs straightened, the hands placed upon them, and delivery effected by the feet. In a transverse presentation (abdominal or dorsal) the child must be gently placed upon its side to make room for the physician's hand, by which it is then softly turned. Presentation of the head is always best as the most wide parts of the fetus are thus delivered first, and the child's hands are not bent back.

"When the child is doubled up (convex) with the extremities parallel, its body must be extended, so that the thighs are forced outwards. If the polar presentation is asymmetrical, the child must be turned so that the convexity is toward the fundus, and it must then be extended as said before.

"When more than one fetus presents, both must be forced back into the uterus, and then one at a time delivered. All this

must be done with a certain, steady hand, so that no bruising shall be caused to the parts, and these must be continually oiled to alleviate pain to the mother. With such care many a child has been saved alive."

This last sentence, says Ingerslev, proves conclusively that Soranus, "used podalic version in the case of a living child and that his help was humane."

"After Soranus," says Garrison in his *History of Medicine,* there were no real additions to obstetrics before the time of Paré some fifteen hundred years later. "The *Rosengarten* of Eucharius Roeslin which appeared at Worms in 1513 was mainly a compilation" from the works of the Ephesian, "as filtered through the manuscript codices of Moschion" while, according to Ingerslev, the obstetrical work which Walther Reiff published at Frankfort in 1545 was "a miserable imitation of Roeslin, without any advice as to help in the case of praeternatural labours and without mentioning any kind of version." That of Jacob Rueff, which is often confused with it, was published at Zurich in 1544, and although this also is "little more than a mere copy of Roeslin, it was of considerably higher value." Rueff "hardly pays any heed to podalic version and exclusively advises turning by the head in all cases of 'Missgeburten,' and therefore in the case of shoulder- and breech-presentations, but for cephalic version he recommends a method 'Schybung des kinds,' which is carried out by the midwife and an assistant, the former working internally on the genital canal, the latter externally on the abdomen, and which is probably the first example of version by combined internal and external manipulation."

Of Roeslin, Ingerslev also says, he "probably also has the merit of having given to extraction by the feet a larger scope than before, and thereby limited the more theoretically conceived but less practically feasible cephalic version."

The *Rosengarten* is best known to English-speaking students of obstetrics as *The Byrthe of Mankynde,* this being the title of the English edition which Thomas Raynalde translated and published in 1545. As the oldest work on obstetrics in our language Raynalde's treatise is of peculiar interest. The copy examined—its black-letter printed pages yellowed by the passage of almost three hundred years—displays seventeen "byrthe

fygures" which are referred to in the text, and by comparison with Rösslin, will be seen to be careful reproductions from the German original. These, the painstaking labor of Ingerslev have demonstrated to be inspired by the pictures discovered in Moschion's commentaries on Soranus, so that they have really come down to us from the earliest times.

"The seconde Booke" of the Raynalde text, which relates to "byrthe which is called unnaturall" informs us that "when the byrthe commeth not naturally, then must the Midwife do all her diligence and paine (if it may be possible) to turn the byrth tenderly with her anointed hands, so that it may be reduced againe to a naturall byrth. As for example: Sometimes it chanceth the child to come the legs and both arms and hands downeward, close to the sides, firstforth as appeareth in the second of the byrth figures. In this case the Midwife must do all her paine with tender handling and anointing to receive forth the childe, the legs being still close together, and the hands likewise remaining as appeareth in the sayd second figure.

"Howbeit, it were farre better (if it may be done by any possible waies or means) that the Midwife should turne these legs comming first forth, upwards againe by the bellyward, so that the head might descend downward by the backe part of the wombe, for then naturally againe and without perill might it proceede and come forth as the first."

Our author then takes up the remaining fifteen "fygures" in order, the last four being concerned with twins. Representations eleven and thirteen are perhaps the most startling to the modern eye, but our author dismisses them so briefly we feel he regarded them as of small importance. "When the birth cometh forth with both the hands and both feete at once, as in the eleventh fygure, then must the Midwife tenderly take the childe by the head, and returne the legs upward, and so receive it forth."

"And when it commeth brestward, as in the thirteenth figure, the legs and hands biding behind, then let the Midwife take it by the feete, or by the head, which shalbe most apt and commodious to come forward, returning the reste upward, and so to receive it forth: but if it may be headling, that shalbe best."

Garrison calls the German text of Roeslin's *Rosengarten* and *The Byrthe of Mankynde* "extremely interesting * * * for

the revival of podalic version as originally described by Soranus." It is true that extraction by the feet is mentioned as a possibility, but certainly no great stress is laid upon it, and a reference to Soranus' technic would lead one to believe that this ancient obstetrician never employed it if the head could by any possibility be rotated to the outlet. In Herrgott's translation of von Siebold we learn that "always, Roeslin says, that version upon the head, is far preferable to him, but that this operation appears to him to present great difficulties, and in this operation, as well as in those made necessary by the presentations hereinafter to be described, one cannot help but suspect the author of having none too much confidence in his own ability to perform cephalic version. Incomplete foot presentations are to be made complete. If the knees present the feet must be brought down; in transverse presentations, the head must be made to engage; if one or both arms present they must be replaced and the head substituted. In breech presentations both feet must be searched for; but always the author loses no opportunity to vaunt the advantages of *accouchement* by the head, and recommends its use whenever possible."

It hardly seems just therefore, to say that Roeslin and Raynalde gave an impetus to the revival of podalic version. It remained for a still later surgeon, Ambroise Paré, to instruct the world as to the possibilities of this form of obstetrical operation.

In the *Briefve collection de l'administration anatomique* published by Paré at Paris in 1550, there are detailed instructions regarding "the manner of extraction of either the dead or living child from the mother's belly."

"The surgeon having thus arranged the woman, puts his hand gently, without any violence into the uterus, thus acquainting himself with the situation and conformation of the child, and if it be alone or accompanied. Let us suppose that the position of the child is not according to nature, that is with the crown of the head presenting at the outlet; to effect delivery under these conditions gently press back the presenting part, and search for the feet, drawing them to the (pelvic) outlet; this accomplished, the child may be easily turned. The feet now being near the outlet, one of them should be drawn outside (the vulva) and a ribbon—such as women use for tying up their hair—tied about the

ankle; then put the said foot, tied in this manner, back into the uterus. This done, look for the other foot, and having found it, bring it down, and then pull on the ribbon attached to the first foot.

"One must be very careful, if it should so happen that there are two children, to bring down the legs of each child one at a time; for otherwise all his labor will be in vain, and do naught but cause the death of the mother, and of the children also, if so be it they are alive. Now, to prevent this from happening, and to be able to discern one from the other, is the reason for tying one foot after it is drawn out, and then replacing it; for if it is not replaced, the leg will fill the vagina (*voye*) and hinder the surgeon from putting his hand into the uterus to seek for its fellow; but after the tied leg is replaced the hand of the surgeon may follow along the ribbon till it reaches the tied heel; then it may travel up the calf and the thigh to the inguinal fold; thence it seeks the other thigh and leg, this being very often found behind the back or about the neck. This found, the surgeon pulls out the said leg—which has *not* been tied, then pulls on the ribbon, thus drawing out both feet together. When the feet have been born he holds the (ankle) joints very carefully together and little by little, without violence, delivers the rest of the child's body. During this process, compression should be made upon the mother's abdomen, as has already been explained, and the mother should hold her breath at intervals, closing up her nose and mouth, and bearing down as much as she is able, and doing all the other things hereinbefore explained. The child once out, the afterbirth is withdrawn in the same manner.

"Observe, however, that when the surgeon has delivered the child in this fashion by the feet, and has him as far out as the falx inguinalis, it is necessary to employ the greatest care in the extraction of the remainder of the body; the two arms may lie straight and pinioned on the two sides of the chest, but it may be that but one of the said arms is thus situated, while the other is lying up by the neck or over the crown of the head; for if Nature is displeased by the large size of the child, the cervix and the orifice of the pelvis may quickly contract and rejoin, so that the head will not be able to pass, and remain inside, unless one pulls

it out forcibly with crochets caught under the chin, or in the mouth, or orbit of the eyes.

"But if, as has several times happened to me, the child's arms are both over its head, and already partly outside the genital entrance, never try to deliver the arms by themselves and the head bent between the shoulders, as this will cause a severe laceration of the mother, and also of the child, if it be still alive. I have several times been called upon to complete the delivery of a dead child in cases where those self-styled 'wise-women' (*sages-femmes,* usually translated *midwives*) had endeavored to drag out the head by one of the arms, and had caused the said arm to gangrene and mortify and brought about the death of the child as a consequence; the arm being in such a condition that it was impossible to replace it in the uterus, both the maternal parts and the arm itself being so greatly swollen. It therefore became necessary to amputate the arm."

The editor of the 1840 edition of Paré's works remarks that this description of podalic version is "the most original thing in the book," because "neither in Roeslin, nor in Rueff, nor in any other author before Paré, has version by the feet" been recommended, an operation which "certainly appears to have been of French origin, and indeed to have had its birth among the barber-surgeons of Paris."

Paré's method was practiced and improved and amplified by his pupil and successor, Jacques Guillimeau. In an English translation of his obstetric treatise, which was printed in London in 1612, we find this description of the Guillimeau technic:

"Whensoever the child, comming into the World, doth put one or both his feet foremost, the Chirurgion shall place the Woman (as it hath been oftentimes told) and having his hands anointed, let him chuse whether he will draw the child forth by the feete, or else if he think it better, to put backe either one or both the feete, and to turne him, and bring his head straight to his passage. For my part, I think it better & safer way to bring him foorth by the feete, than to turn him upside downe, and lift his feete upward, thereby to bring his head downward to the passage. And therefore, whether he come with one, or both his feete forward, the greatest care must be to knowe how his whole body is placed & lyes in his Mother's womb: as whether his face

and belly be turned toward the mother's backe, and his shoulders, backe and buttocks toward her Navell: likewise whether his arms be separated from his thighs, flankes and sides, which ought also to be diligently observed in all births that are contrary to Nature, especially in those, when the child is drawn foorth by the feete. For when you draw him out of the wombe with his buttocks, backe, and hinder parts of the head, turned toward the back of the Mother, and his face toward her Navell, and belly, then without doubt, the feete, buttocks, body and shoulders of the child being drawn foorth, when the head cometh to the *os pubis* it will hold thereon; which being so catched, it will be very hard, nay, impossible, to draw forth the child; and if you draw him too violently, it is to be feared lest you breake his necke, especially if the child be too big, or his head great. Therefore when you have drawne him by the feete till he come forth as far as the buttocks, and wast (waist?) before you draw him any further, you must mark diligently the position of the body, whether the belly, breast and face be upward or no. For if he be so placed before you draw him further you must turn him upside down, which you shall performe, if you hold him fast by the buttockes and hips, with both your hands, and turn the whole body (withal drawing it gently) and so bring the belly, breast and face downward, which being done, you shall draw him forth with ease, without danger of staying."

Guillimeau seems also to have been the first obstetric author to advocate podalic version in cases of placenta previa, for in Chapter XII we are told that "if the after-burthen bee come foorth but a little, or else very much * * * if you find any difficulty, or if you perceive that the child's head cannot easily be brought forward * * * then without doubt the best and surest way is to search for the feete (as we have said) and to pluck him forth gently by them."

Another pupil and follower of Paré was Louise Bourgeois, who as midwife to Maria di Medici, ushered Louis XIII and many another royal infant into the world, and of whom Allport gives us a most interesting and entertaining account. She was the wife of Martin Boursier, a "barber-surgeon," for twenty years a resident pupil under the great Paré's roof. Louise Bourgeois thus had an opportunity for real obstetric training,

and that she profited by it is evidenced in the text-books she left behind her, even more than by the worldly distinction to which she attained.

In her first published book which came out in 1609, she has this to say regarding *presentations:* The most difficult one is where "the navel is before the abdomen presenting—arms and legs behind" especially if the child be large, for then the midwife has no room to introduce her hand to attempt a version. She must therefore reduce the prolapsed cord though if she were not present at the rupture of the "bag of waters," there is a good chance that the child will die following the prolapse of the cord, as the infant's only chance of breathing will be thus cut off (!). So the midwife who has to deal with a prolapsed cord must replace it without delay, put her patient in the obstetrical position, and look for the feet with the intention of doing podalic version during a uterine contraction.

Another situation likely to dismay the midwife is "when the child presents across its mother's body, presenting the side and sometimes the after-birth in front." Louis Bourgeois' method was to reduce the placenta and perform podalic version. If the shoulder presented she used cephalic version, which seems to Felix Damour—from whose thesis this information is quoted —as particularly strange, inasmuch as she employed podalic version in all other presentations, the modern French obstetrical practice being precisely the opposite, the podalic form being the one "now systematically employed (in shoulder presentations) to the great profit of the mother and of the child." If an arm protruded she bathed it with cold water in the hope that the fetus would voluntarily withdraw it. Failing this the arm was to be pushed back, and search for the feet at once instituted, every effort being made to strengthen the pains, so that extraction could be made during a uterine contraction.

Louise Bourgeois was opposed to attempts at spontaneous delivery in a breech presentation. She adhered firmly to her favorite podalic version. Damour remarks that "we can well see that Louise Bourgeois was very fully acquainted with all the possible presentations which might be encountered. For nearly all bad presentations she counsels version and extraction by the feet, and this could hardly have been otherwise since she had

studied under Paré who was responsible for the honorable revival of the podalic form of version."

Louise Bourgeois' influence among the midwives of her day was undoubtedly very great, and we can probably safely infer that podalic version became increasingly popular, in France at any rate, during and after her time.

The seventeenth century produced a number of works on gynecology and obstetrics, and we are able to form a pretty clear idea of the opinions and technic of those who assisted at the initial appearance of each succeeding generation. It is to be regretted that the average modern obstetrician has neither the time nor the opportunity to study the records which these "old masters" have left behind them. The historian finds it a difficult matter indeed to keep from exceeding the narrow confines of a historical summary, and refrain from lengthy quotations from the quaint volumes which house the obstetrical lore of this century.

Perhaps the foremost "man-midwife" of this period was Francois Mauriceau whose *Traité des maladies des femmes grosses,* first published at Paris in 1668, was re-issued at least six times and translated into several other languages. The form most familiar to English readers is Hugh Chamberlen's translation, which was still being re-issued in England fifty years after Mauriceau's death. This work is such delightful reading that one is loath to confine his attention to Chapter XI of Book 2, which treats *Of unnatural Labours where Manual Operation is absolutely necessary, and what Observations the Chirurgeon must make before he goeth about it,* and the succeeding chapters which tell in detail *Of a Delivery when the Child comes with the Shoulder, Back, or Breast,* or *with the Knees,* or *Of those Births wherein the Infant presents Belly, Breast or Side,* or—by way of summary, *Of Labours wherein several Children present together in the Different Postures above named.*

Mauriceau handles the subject of version in a very thorough manner, reverting even to "*Hippocrates* his Book" wherein the French author assures us that the Father of Medicine "admits of but three general ways for a child to be born, to wit, with the Head first, which is the sole natural Figure when it comes right; the Second with the Feet; and the Third with the

Side or A-cross: Which two last are quite contrary to Nature. But to make it more plain we say, that a Child may come wrong four several general ways, which are: First, any of the foreparts of the Body. Secondly, any of the hinder Parts. Thirdly, either side. And fourthly, the Feet. * * * All the particular and different wrong Postures, that a Child may present, can be reduced to the above-named four general ways, according as they approach more to the one than to the other of them."

Having thus summarily disposed of Hippocrates, our author proceeds to describe how the accoucheur should comport himself. We are informed that "he must be healthful, strong and robust; because this is the most labourious of all the Operations of Chirurgery; for it will make one sometimes sweat, so he shall not have a dry Thread, tho' it were the coldest Day in Winter. * * * He ought to be well shaped, at least to outward appearance, but above all, to have small hands for the easier Introduction of them into the Womb when necessary; yet strong, with the Fingers long, especially the Fore-finger, the better to reach and touch the inner orifice. He must have no Rings on his Fingers, and his Nails well pared, when he goeth about the Work, for fear of hurting the Womb. He ought to have a pleasant Countenance, and to be as neat in his Clothes as in his person, that the poor women who have need of him, be not affrighted at him. Some are of Opinion, that a Practitioner of this Art ought on the contrary to be slovenly, at least very careless, wearing a great Beard, to prevent the Occasion of the Husband's Jealousy that sends for him. Truly some believe this Policy augments their Practice but 'tis fit they should be disabused; for such a Posture and Dress resembles more a Butcher than a Chirurgeon, whome the woman apprehends already too much, that he needs not such a Disguise. Above all he must be sober, no Tipler, that so he may at all times have his Wits about him. * * *"

Mauriceau did not greatly favor the use of the hair ribbon so earnestly advocated by Paré, for in describing the management of footling presentations, he remarks; "All Authors, for fear of losing hold of the first foot, advise to fasten a Ribbon to it with a running Knot, that so it may not be sought a second time when the other is found. But that is not absolutely necessary, because usually when one hath hold of one, the other is not

far off." ("Not always," is the laconic marginal comment of Editor Chamberlen.)

Having asserted that when the presenting part is "one Hand only, or a whole Arm first" the accoucheur will find himself in a situation most "painful to the Chirurgeon," our author proceeds to direct how the hands must be guided back by the surgeon's own hand, "which he must afterward slide into the Womb, under the Child's Breast and Belly, so far till he finds the Feet, which he must gently pull toward him, to turn and draw it forth by them as hath already been directed; observing to do it with as little Violence as may be, which is much more easy, sure and safe, than to busy oneself in putting it into a natural Situation. As soon as he shall have so turned the Child by the feet, if he hath hold but of one, he must search for the other, that so he may bring it to the first; when holding them both he must govern himself afterward in bringing the Child as we have formerly shew'd in speaking of those Labours where the Feet come first."

If the accoucheur finds himself confronted by "both Hands and Feet * * * so shut and pressed together that they seem to be all of one and the same Shape" he is directed to "slide his Hand" into the uterus "and presently direct it toward the Infant's Breast, which he will find very near, and by that ("Unnecessary" sneers Editor Chamberlen upon the margin) let him gently thrust back the Body towards the Bottom of the Womb, leaving the Feet in the same place where he found them" a footling delivery being then easily accomplished.

Of course "This Labour truly is a little troublesome, but nothing near so much as that * * * where the Child presents only his Hands; for in that the Feet must be searched a great way off, and it must be quite turn'd about, before it can be drawn forth. But in this they are ready presenting themselves, and there is not much to do but to lift and thrust back a little the upper part of the Body which is almost done of itself by drawing it alone by the Feet."

Podalic version is Mauriceau's rule in all "Unnatural deliveries." In Chapter XXV, he emphasizes the fact that in a case "wherein the Infant presents Belly, Breast or Side * * * it is in great danger, if not timely succour'd," because "for the

most part the Navel-string comes forth." The surgeon must "gently slide up his flat Hand (being well anointed for the easier entrance) towards the middle of the Child's Breast," or if "it presents the middle of the Belly" or if "it comes with the Side," he must in all situations find the feet, "which he must bring to the Passage, to draw it forth in the same manner as if it had come footling."

Mauriceau's opinion of cephalic version, and of those of his colleagues who advocated it, is thus succinctly set forth:

"Those Authors that have written of Labours and never practiced them, as many Physicians have done, do order all by the same Precept often reiterated, that is, to reduce all wrong Births to a natural Figure, which is to turn it that it may come with the Head first; but if they themselves had ever had the least experience they would know that it is very often impossible; at least if it were to be done by the Excess of Violence, that must necessarily be used to effect it, it would go near to destroy both Mother and Child in the Operation: A *Fiat* in this Case is soon said and ordered; but it is not so easily executed as pronounced. For my part, I am of an Opinion clear contrary to theirs (enthusiastic marginal endorsement by the Editor); and such as are skilful in the Art will surely agree with me in it, that is, that (whensoever the infant comes wrong, in what Posture soever, from the Shoulders to the Feet) it is the best way and soonest done to draw it forth by the Feet; searching for them, if they do not present themselves, rather than to try to put it into a natural Posture, and place the Head foremost; for the great Endeavors often necessary to be used in turning the Infant in the Womb (which is a little harder than to turn a Pancake in a Frying-pan) doth so weaken both Mother and Child, that there remains not afterwards Strength enough to commit the Operation to the Work of Nature; and usually the Woman hath no more Throws nor Pains fit for Labour, after she hath been so wrought upon: for which Cause it would be very tedious and difficult, as also the Infant, which is already very weak, would most certainly perish in the Passage without being able to be born. Wherefore, it is much better in these Cases, immediately to fetch it by the Feet, searching for them, as I have already directed, when they do not present themselves."

Paul Portal's *La pratique des accouchements,* contains numerous case reports that give us a very clear view of his handling of bad presentations. In the general directions preceding the case reports he recommends podalic version as the safest procedure in all difficult cases, emphasizing that as soon as the feet are brought out, the *accoucheur* must "baptize them immediately with fair water, * * * which done proceed in the most convenient way of delivering the woman." One case report must suffice to indicate Portal's method:

"Observation LXVIII: June 17th, 1678, at ten o'clock in the morning, I was called to a woman in labour, in a joyner's house, in the Rue de Berri au Marais. The child's arm appear'd quite without to the shoulder: the midwife had indeed endeavored to bring it back, but to no purpose, the arm being much swelled, by its long continuance in the passage, and perhaps also by the violent management of the midwife; besides that the said arm was squeezed in very hard in the inner orifice of the womb. I did all that I possibly could to reduce it back into the womb; but finding it impracticable I convey'd my hand along it, endeavoring to dilate with my fingers the inner orifice of the womb, to open my way into it, laying sometimes my left hand upon the woman's belly to keep her steady down. After I had thus brought my hand within the womb, I could distinctly feel every part of the child. The first was the neck, then the head, lying on one side toward the mother's fundament; and guiding my hand along the child's body, I found it to lie double with the belly toward the bottom of the womb, the knees bent, the legs under the head, and the left arm cross the legs: if I could have taken hold of a knee I might have delivered the child then; but I thought it more safe to go further to the leg, which tho' not so much involved in the membranes of the after-burthen, yet I could not bring it out without great trouble, because of two main obstacles; first, the head lying across the inner orifice of the womb, I was forced to remove it first, to prepare a freer passage for the feet; the second was the arm, which likewise obstructed the passage.

"It also happened unfortunately, that my hand being at that time seized with a benumbedness, I was not able to keep the foot, which occasioned me no small trouble; for though my hand

soon recovered, yet the foot being brought back from the place where I had brought it before, betwixt the head and the neck of the child quite bent behind the shoulder, I had much ado to bring it again (without danger to the child) to the inner orifice of the womb; besides that it was as slippery as an eel, and thus several times slipp'd out of my fingers, till at last I wound it up in a fine linen cloth, and so pulled it toward me with all my strength. I heard some of the child's limbs crack in pulling out, which made me fear their being broken, but it was unavoidable. I having occasion of all my strength to deliver it, without which the mother must have been in evident danger of being lost, which ought to be prevented by all possible means, especially after the child has been baptized.

"Whilst I was endeavoring with all my strength to pull out the child, the mother assisted me so effectually, that the thigh above the leg which I had in my hand, coming out at once to the arse, the arm drew insensibly backwards; then conveying my fingers into the womb, to see how the other thigh was laid, I found the leg lying upon the belly, and so brought it out with little further trouble.

"I must confess, that such deliveries as these require a great deal of resolution in a man-midwife, which ought not to be undertaken rashly, but only when the mother as well as the child are in danger of being lost. * * * Having got out both the legs, I pulled the rest of the body to the shoulders (with incredible pains) and the head followed at last. * * * the child was born alive, and appeared of a natural color, notwithstanding the hardship it had endured in the birth * * * The woman did well during her whole lying-in, tho' she was no less than forty years of age."

Pierre Dionis, who was a French surgeon of note at this same period, has also left us a volume devoted to obstetrics. In it he remarks that "in difficult labors Nature often does a great deal, but in unnatural ones there is nothing to be expected from her; it is the surgeon alone that must do the business. The life of both mother and child is then in his hands and he has a fair opportunity given him to show his skill and dexterity in turning the child in the womb, and bringing it into the world, whereas, without this assistance, it can never see the light."

Dionis, however, always waited as long as possible, for Nature to come to his aid. If she failed him he placed his patient "across the bed with her legs hanging down." "The surgeon, having put a napkin or towel about his waist, must sit down before the woman, on a low stool, as near to her as may be, that he may give her the necessary assistance with the greater convenience and ease, both to her and to himself, and take a nap now and then in the intervals of her pains." Dionis condemns the practice of "some authors" who suggest binding the patient. "Has she not enough to complain of though she is not bound with cords like a wretched criminal? * * * Three strong women holding her safe, as we have directed, will do the business very well." We can easily believe him.

Dionis sneers at Mauriceau's caution against mixing up the feet of twins, which he declares is impossible; neither has he any patience with the "hair ribbon" as an obstetrical accessory. His frequent jibes at Mauriceau and his methods gives us an uneasy feeling that professional jealousy among obstetricians did *not* originate in the Twentieth Century. He tells us that "those authors who understand something of the *theory* of midwifery, but nothing of the *practice* of it, are unanimously of the opinion that when the child is to be turned it ought to be done so that his head may always come foremost. But had they the least experience they would readily own that this is not to be done; and all who have endeavored to put this rule in practice, have found so much difficulty in it that they agree, that in unnatural labours it is best to bring forth by the feet."

In placenta previa and eclampsia, the only resource of Dionis was podalic version, and thus, he avers, "a great many women who have had most of those terrible symptoms, have been happily preserved by the friendly and seasonable help of the Artist."

Another French obstetrical writer whose technic and opinions were revered for many years throughout Europe, was the Sire de la Motte, a beautiful edition of whose *Traité Complet des Accouchement,* printed at Leiden, in 1729, lies before me. This work is arranged more in accordance with the modern conception of a surgical treatise, the different sections being discussed under chapter headings, followed by case reports, and

usually a "reflection" by the author. The case reports, to be sure, partake now and again, of the nature of chatty anecdotes of a somewhat doubtful character. The second and third books take up *Unnatural Accouchments* and it is here, for the first time, that we find podalic version recommended in head presentations. When labor pains were weak, or the head very large, de la Motte believed a footling delivery offered many advantages, and his manner of delivering the aftercoming head—"that which I did was to put my hand flat under the chin, and my finger in the child's mouth, after which I drew down with that hand, and pushed from above with the other alternately, until that head was disengaged"—could hardly have been improved on, considering the small knowledge of anatomy possessed by the obstetricians of that time.

Contemporary with Mauriceau, Portal, and de la Motte was Justine Siegemundin—"Court Midwife to the Electorate of Brandenburg." Her book, originally published in 1690, was among the first medical treatises to be written in German, and was for that reason greatly opposed, by the "men-midwifes" especially. The copy which I have examined, printed in 1723, and once the property of Abraham Jacobi, is elaborately illustrated, giving no less than twenty-six plates intended to show presentations necessitating some form of version. Though Siegemundin's anatomy—or that of her artist—falls somewhat below the present gynecological standard, no modern *accoucheur* could fail to find these plates of absorbing interest. The black-letter text is arranged after the Socratic model, and we find Siegemundin replying to the inquiries of her pupil Christine, and explaining how a presenting arm should be anointed with "warm beer and butter"— in pleasing contrast to the cold water methods of the French and English midwives. Unlike her sisters of other lands, she did not hesitate—apparently—to personally wield the knife or other obstetrical instrument, instead of summoning some mere man to perform this operation. No form of version seems to have her exclusive endorsement, podalic, cephalic or pelvic, they were all alike to her—on paper at any rate. The frontispiece gives us a portrait of Siegemundin herself, and one can readily believe that the possessor of such a countenance,

would have presided undismayed over contingencies which would have caused Mauriceau or Portal to turn pale.

Not so elaborately embellished, but far more in accordance with modern ideas of an obstetrical treatise is the *Novum Lumen* of Hendrik van Deventer, who practiced obstetrics and orthopedics in Holland in the last years of the seventeenth century. Garrison says that "he has been rightly called the father of modern midwifery, for his book, with its interesting plates, gives the first accurate description of the pelvis and its deformities, and the effect of the latter in complicating labor."

The Dutch obstetrician did not hold a brief for any particular form of version. "If by chance the Navel-string comes along with the Elbow, Shoulder, Foot or Cheek, so that it does not touch the head; then the Midwife, if the Humours are not flowed out, is not to spend her Time in removing this or that Part, for it would be Labour in vain, except sometimes by pulling the Hand or Foot, she hath a Mind to try, whether by so doing the Infant will alter its Posture; * * * The Midwife being ready with her Hand presently passed into the Womb, to introduce the Infant with its Head foremost into the Passage, according as it is situated; or to draw it out by the Feet, not suffering the Navel-string to come out before the Infant. But a Midwife or Surgeon that practices Midwifery being sent for late, if they find the Navel-string along with the Arms, or Foot already come forth, the String being as soon as possible put back again, she ought to draw out the Child by the Heels."

The different presentations which require version before delivery is possible are illustrated by plates, more modest in size but of far greater anatomical accuracy than those of Justine Siegemundin. To be sure the outline of the uterus is painfully suggestive of the hip-pocket flask of happy memory, but the relation of the fetus to the maternal parts is delineated with a great deal of accuracy and skill. The author's explanations of these plates are founded upon a good understanding of anatomy, both fetal and maternal. He gives minute instructions for the version and delivery of what his English translator terms "complicated Infants" devoting many closely printed pages to each possible presentation, and its correct and happy solution by the properly instructed midwife. "What signifies it here to make

longer delays? The Infant, whether it offers itself single or double, with its Feet foremost, or Head last, is brought forth; why then should a Midwife think much to draw out the Feet presently. If she can but do it with dexterity enough." Malposition of the uterus, was in van Deventer's opinion by far the commonest cause of bad presentations.

A modest *Essay on the Improvement of Midwifery* put forth in 1733 by Edmund Chapman, an English surgeon, is often overlooked by medical historians. The table of contents informs us that: "It is our Author's endeavor in these Pages to show that most Births may be performed by the HAND only, or if Instruments must be had recourse to, by the Forceps or FILLET, which are very safe." Also, "Our Author thinks with Dionis, that it is needless to enumerate all those different postures of Infants in the Womb, which other Writers have displayed," because "A Child either presents with its Head, or it does not." Moreover "Our Author condemns the Method of putting the Head back when it bears against the Os Pubis, and then leaving it again to Nature, and thinks when the Hand is once in the Womb, that it would be better to have Recourse to the Feet."

The "FILLET" we are informed is an invention of the author's own, and he "begs leave" to keep it a secret, hoping not "to be censured for so doing, any more than the great *Dr. Chamberlen* was for his chusing to conceal the Method or Secret whereby he could extract Children in this Case without *Hooks* where other artists were forced to use them."

Chapman was a great stickler for professional courtesy; he states with particularity that he "leaves the Diseases which Child-bearing Women are subject to, to Physicians whose proper Province it is to treat of them" and omits all prescriptions, as being beyond the authority of a surgeon, yet he commends the unthinkable barbarity of Chamberlen who kept secret the pattern of the obstetric forceps, capable of saving the lives of countless infants slaughtered by craniotomy and dismembering operations, even translating into English Mauriceau's description of his death-dealing *tire-tête;* a piece of commercialism and lack of professional honor, almost unparalleled even to-day.

When Chapman wrote, the secret of the forceps had already

been sold and made public, but except in cases "when the Head lies high, not yet out of the Womb, or low in the Pelvis" he preferred version to the use of any "instrument" as it was "much better to turn the Infant (in face presentations) and bring it out by its Feet, than to put Labour upon the foot of Nature. * * * Thus, I say, a Child presenting with its *Head,* is often to be turned, and delivered with the *Feet* first, in all other Postures whatever always with the Feet first; and always turned except when it presents with the Feet, and Nature has saved the Artist that Labour, and the Mother the Pain."

Quite in the spirit which we usually attribute to the sons of the Emerald Isle, is conceived the *Treatise of Midwifery* which Fielding Ould, Man-Midwife, of Dublin, gave to the world in 1742. In a lengthy preface he takes a few shots at his various predecessors in the obstetrical art, notably Mauriceau and van Deventer, and lest any spark of life be left to them after that, he occasionally adds a stone or two to the cairn as he goes on his way through the *Treatise.*

"Having endeavored to remove the mistaken Fancy of the Obliquity of the Womb (van Deventer's pet theory) we may the more properly proceed to describe the various unfortunate Situations of the Infant therein contained." This he does with great gusto, adding elaborate directions to arm the alert *accoucheur* against each contingency. If the pelvis be small, even though the head presents "the Operator must turn his Attention another Way: He must introduce his Hand into the Matrix, along the Child's Breast, to bring it forth by the Feet, and especially if one or both Hands or the Funis comes with the Child's Head, for there is hardly any possibility of returning any of them to their proper Place; the Funis will fall down as often as you thrust it up; and there is no room to bend the arm for its Reduction. As there is no Danger of Hurting either Mother or Infant, by bringing it away by the Feet (provided the Operation be judiciously performed) it is better to do it immediately, than depend on a small Probability of Success by replacing the Head; for this will fatigue and frighten the Patient, as much as bringing forth the Child by the Feet."

We are informed that "one of the most difficult Cases in Midwifery for the Operator" is that where "the Hands come by

themselves * * * caused by the Child having them near the Head when the Membranes break, which getting into the Orifice, consequently push the Head to one Side; the Head being out of its natural Direction, cannot press on the Orifice so as to dilate it, and the small Dilatation that is made, is taken up by the Hand, which cannot be put back if far advanced, so as to give Admission to the Operator's Hand, for to bring forth the Child by the Feet which is the only Method in this Exigency; and again the Feet are at a greater distance from the Orifice in this situation than in any other."

The hand must be replaced if possible; failing this "the Operator must dilate the Orifice, so as to thrust up his Hand by the Side of that of the Infant; taking hold of the Feet as above; and in Proportion as the Feet advance forward, the Hand will retire into the Womb. The most convenient Posture for the Patient to be in, during this and all other Operations where the Child is to be turned in the Womb, is on her Knees, in a Bed at a convenient Distance from the Operator, leaning her Head on a Woman's Lap, who must sit on a low Stool in the Bed for that Purpose."

Ould's directions for posture—which he enlarges upon elsewhere—do not seem to be duplicated in any obstetrical work of this period, the French writers all advising that when version is to be done the woman should be placed in the dorsal position, the knees flexed and held in position by two attendants.

Podalic version was Ould's resource in all cases of transverse or breech presentation. Most "dangerous and difficult" are those cases where "the Breast or Belly presents to the Orifice. * * * It is more difficult to extract a Child by the Feet when it is in this Situation, than in any other whatsoever, which is the reason why some Authors advise to bring the Head to its proper Position, and leave the rest to Nature, but if the Reader considers how much the miserable Patient must have suffered, and how much her strength must be exhausted, when matters come to this sad period, I am sure he will not desire to have her left any longer in Torture; but have the Child brought forth with all convenient Speed; which must be by the Feet, notwithstanding the Difficulty."

"Having given the Patient a Draught of some Cordial

Liquor, such as Sack-whey, Cinnamon-water or the like, and being placed on her Knees as before directed, the right Hand must be introduced into the Womb, being well greased either with Oil or fresh Butter; and sliding it along the Child's Belly, fix two Fingers under the Os Pubis, between the Thighs and then pull your Hand towards you; which giving, as it were a rotary Motion to the whole Child, will bring the Legs nigher the Orifice. When you have brought it so nigh as to be within reach of the Knees, take hold of the Thighs separately near the Articulation, and bring them close to the Belly; this will bring the Feet still nigher, which take hold of, and draw forth with Care and Caution, when the Feet have come to the Orifice, the Body will follow with less Difficulty than when the Back presents, proceeding in the same Manner; always observing to bring forth the Body with the Back next the Os Pubis of the Mother."

Sir Fielding, it will be observed, was the first writer on obstetrics to give a scientific description of the *mechanism* of labor. This aspect of obstetrical knowledge was further advanced by the French surgeon Jean Louis Baudelocque, Sr., whose *L'Art des Accouchements* ranked as the standard obstetrical treatise both in the Continent and in England for almost a century.

Baudelocque is known principally as the great advocate and intelligent employer of the obstetrical forceps, but his views and technic of version are also set forth in great detail, more possible presentations being considered than in any previous text book. He could see no "utility of those whimsical and inconvenient positions which some accoucheurs have advised to place the woman in; as on the elbows and knees, &c. * * * The woman must be laid on the back, as horizontal as possible, the breech being placed at the edge of the bed, so that the *coccix* and *perinaeum* may be free, the thighs and legs half extended, and the feet resting on two chairs placed properly, or supported by assistants."

Moderation was Baudelocque's watchword. "The operator should always proceed coolly, and appear tranquil, even in the most desperate cases, that he may not augment the fears of the woman, to whom the smallest embarrassment, the most trifling motion or gesture, are then as so many mouths, which seem to her to announce her destruction."

A gentleman in the presence of the other sex, must conduct himself as such, no matter what befalls. "If it is necessary to uncover the arms to turn the child, it is proper to do it no further than the arm penetrates into the *uterus*. Some practitioners are still in the habit of putting on an apron, baring their arms, and even putting on false sleeves, &c. but these precautions, most of them useless, always strike the woman with terror," so that she is often "thrown into a state of anxiety and disorder, difficult to remove."

The psychic state of the patient being properly adjusted, we are told that "we cannot act with too much slowness and circumspection, in dilating the neck of the uterus, when it continues thick and is not very supple," and, "after the hand has cleared the entrance to the *uterus*, we are often obliged to withdraw it many times, before we can reach the child's feet; especially if we do not proceed methodically."

Baudelocque is, so far as I have observed, the first author to advocate *combined* version. "During the whole time that we are introducing the hand and turning the child," he tells us, "the other hand should be applied externally, above the *fundus* of the *uterus*, to fix it, or change its direction occasionally, and to make certain pressures, which circumstances, more difficult to determine here, than to perceive while we are acting, render sometimes necessary."

Important adjuncts to the operation of version are the necessity of informing "the woman's relations * * * of all the difficulties and the danger, if any exist, in order to avoid the blame which they think they have a right to throw on us, in case of a disagreeable event;" and above all "when there is any reason to fear for the child's life, we ought to baptize the first part that appears without; and in laborious cases, it is even sometimes proper to convey the water to the child's head, by means of a syringe, before we attempt to extract it."

The eighteenth century saw the practice of obstetrics—especially among the upper classes—rapidly passing from the hands of women into those of the better instructed and more competent male surgeons. The midwives, however, did not give way without a struggle, as is witnessed by the *magnum opus* of Mrs. Elizabeth Nihell. Allport remarks that this book is not so

much a treatise upon obstetrics as upon obstetricians. Her "point," the authoress informs us, "is only to establish the superiority of skilful hands to the use of instruments." Mrs. Nihell is at so much pains to vilify the "men-midwives" and their "murderous" instruments that she does not give us many details of her own better—according to her way of thinking at least —methods of handling bad presentations. Apparently she seldom practiced podalic version, and had grave doubts of footling delivery in any case, if one may judge by several harrowing accounts she gives us of infants inadvertantly beheaded by too vigorous attempts to deliver by the feet. To be sure these all occurred in the practice of *men* midwives.

The especial object of Nihell's animosity was William Smellie, whom she regarded as chief among the "instrumentarians." Smellie's *Treatise on the Theory and Practice of Midwifery*, which ran through many editions, usually appearing in three volumes, does indeed, give a large amount of space to forceps extraction, but he also has a good bit to tell us regarding the manual treatment of "preternatural labours." He makes a few jibes at his predecessors, notably van Deventer, and his superior knowledge of anatomy together with no small degree of natural skill, added to the experience gained in a long and extensive practice, easily exalt him above any of his seventeenth century predecessors. His cephalic method was based upon the pubic measurements, which he seems to have been the first obstetrician to employ.

"In all cases where the breech presents" he thought "the safest practice is always to push up and bring down the legs, provided the *Os uteri* is sufficiently dilated, and the waters not wholly discharged," but where a bad presentation was discovered before rupture of the membranes he usually endeavored to effect cephalic version.

Dr. Smellie's treatise proceeds as solemnly as the latest emanation for Johns Hopkins or the Mayo Clinic. There are no racy anecdotes such as Mauriceau loves to recount, no intimate family details like those Portal so hospitably invites us to share, no outbursts of temper, even, against those whose technic and practice differed from his own. We are inevitably impressed with the conviction that he was a thorough master of his sub-

ject, and "instrumentarian" or not, displayed greater skill and common sense in his management of bad presentations, than any who had gone before him.

As the eighteenth century drew to a close we find less and less concerning the technic of version, and a corresponding lack of enthusiasm for any particular form of this maneuver on the part of obstetricians. This was because the obstetric forceps—the jealously guarded secret of five generations of the Chamberlen family—had gradually come into common use, and its adept employment came to be regarded as the chief qualification of the trained accoucheur. William Hunter, who was Smellie's pupil, and may be said to have succeeded to his position as the leading English obstetrician, did not favor the employment of forceps, and Garrison tells us that he "sometimes exhibited his own instrument, covered with rust, in evidence of the fact that he never used it." Unlike Smellie, also, William Hunter possessed a pair of small and shapely hands (Aveling says that "Dr. W. Douglas described Smellie as 'a raw-boned, large-handed man, fit only to hold horses or stretch boots in Cranburne Alley' ") and was therefore better equipped by Nature to do a difficult version with skill and safety. Hunter's anatomical knowledge—which has come down to us in his remarkable *Atlas of the Gravid Uterus*—was such as to give him a mastery of the most perplexing situation.

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## CHAPTER II

## VERSION IN THE NINETEENTH CENTURY

The opening of the nineteenth century found the "man-midwife" holding the field of obstetrics, and his female competitor relegated to second place in the families of the well-to-do. The general attitude is perhaps well summed up in the terse *Instructions succintes sur les Accouchements en faveur des Sages-Femmes des Provinces* (*Brief Instructions on the Conduct of Labor for Country Midwives*) written by Raulin in 1771. "If the engagement (at the pelvic brim) of any part of the face become considerable, delivery by the head will not be practicable; it is necessary that the midwife make (the head) reenter (the uterus) so as to accomplish delivery by the feet; if she is unable to do this, she should call surgeons to draw out the head by the aid of forceps."

Works on obstetrics became relatively very numerous from the last quarter of the eighteenth century onward, but the examination of a large number of them—Astruc, Bard, Antoine Petit (a most interesting manuscript copy, dated 1774), Hamilton, Denman, Burns, Dewee, Gooch, and a number of others—reveals no advance over the earlier methods of handling difficult presentations. Labor was permitted to go on for a week, provided any spark of vitality remained to the travailing woman; separation of the after-coming head was apparently a frequent accident, as directions for retrieving it are invariably given, although the elder Hamilton does remark that such a gruesome outcome is only the result of poor obstetric technic.

When version was to be employed, the podalic method was practically always recommended, the cephalic form seeming to have fallen altogether into disuse. To be sure Burns does tell us "if the patient be known usually to have a short labour, if the pains be brisk, the os uteri dilated, or in a relaxed and easily dilatable state, the liquor amnii retained and the head movable, then the head may, without any difficulty or much irritation, be

placed in the proper position, with a fair and reasonable chance of success." Dewees also suggests the employment of cephalic version under similar circumstances.

Soon after the opening of the nineteenth century we begin to find reports published in medical journals and these give us a more vivid and timely insight into the practice of midwifery of that day.

In the *Edinburgh Medical Journal* for January, 1818, John Breen of Dublin suggests "an improvement in an operation frequently practiced for more than two centuries." He bases his observations on the possible presentation represented in Smellie's 34th Plate. The illustration is not reproduced or described, but reference to Smellie's *Midwifery* discloses the figure accompanied by a legend stating that it:

"Shews, in a lateral view of the *Pelvis,* one of the most difficult praeternatural Cases. The left Shoulder, Breast and Neck of the *Foetus* presenting, the Head reflected over the *Pubes* to the right Shoulder and Back, and the Feet and Breech stretched up to the *Fundus,* the *Uterus* contracted at the same time, in form of a long Sheath, round the Body of the *Foetus.*"

Breen announced that he had selected this plate in order "to avoid the imputation of inventing a position favourable to the illustration of the method now recommended. Were this plate exhibited to an intelligent person, whose mind had not been biased by such expressions as 'tirer par les pieds', 'search for the feet and turn', and an inquiry made from such an individual, what would be the best method of changing the situation of the child, so that the head should be removed toward the fundus uteri, little doubt can exist that he would direct one or two fingers to be hooked in the flexure of the knee, and the other hand to be applied to the presenting part, while the hand engaged in the uterus should be drawn downwards and forwards, towards the centre of the longest diameter of the brim of the pelvis. By this proceeding, the child would be made to revolve on the lesser axis of the trunk, and the foot would be brought into the vagina within the reach of a noose."

This, Dr. Breen was convinced, was a more rational method of version than the customary podalic operation. "If the child still continue jammed, after using moderate force", he coun-

seled that "the situation of the hand in utero be varied, and the fingers be hooked in the flexure of the other knee. When, by this procedure, one foot is brought within the reach of a noose, it may be sometimes necessary after applying one, to retrace the same steps to bring the second within the power of a similar application. By acting according to these directions, I can scarcely conceive the possibility of failure, where it is practicable to introduce the hand."

Fourteen years after Breen's article appeared, the *Edinburgh Medical Journal* published another by Thomas Radford. This author also criticized the universal custom of "bringing down the feet." He calls attention to the fact that breech presentation is second only to occipital presentation in the lowness of its foetal mortality, which he believes to be because "the measurement of the child round hips and thighs, when the latter are turned up toward the belly as in breech cases, approaches nearly to the circumference of that portion of the head which lies parallel with the pelvic cavity in natural labour. The dilatation of the *os uteri* and the *os externum* is effected so completely by the passage of the breech, that very little resistance is offered to the expulsion of the head."

Reasoning in this way Radford puts the question: "Is there then no practice which would enable us to bring down a part, approximating in its measurements to that of the breech presentation? * * * * * There is, and this practice consists in never bringing down more than one foot in the manual operation of turning the child * * * * * leaving the other which would become turned up towards the abdomen of the child, thus producing a presentation compounded of the breech and one lower extremity. * * * * * Where the contraction of the uterus is so strong as to create a difficulty, we should not search for the foot provided we can secure and bring down one knee; for as the knee is drawn down the foot will descend and come within reach."

Dr. Radford's article was accompanied by one emanating from "John Roberton, Esq., one of the Surgeons to the Manchester Lying-in Hospital." Dr. Roberton, having made the observation that version was much more easily accomplished when uterine contractions were weak or absent, proposed to re-

move this hindrance to the surgeon's operations by bleeding the patient to "some degree of faintness" and then dosing her with "from fifty to seventy drops of laudanum". It is greatly to be regretted that Dr. Roberton does not give us any case reports, nor records of either foetal or maternal mortality, following the enforcement of this regime.

Another author of this period who broke away from the tradition of podalic version was Alfred Velpeau whose treatise on obstetrics went through numerous editions in French and English. He commends Breen's advice to employ the left hand for the version, and the right for external manipulation. In 1839 Fleetwood Churchill published a series of *Researches in Operative Midwifery,* appearing serially in the *Dublin Journal of Medical Science,* the second article, on *Version* or *Turning* being the first complete monograph on this subject I have been able to find in the English language. A comprehensive historical sketch precedes a consideration of the different forms of version, as advocated and practiced by the leading obstetricians of that time, and this is followed by a description of the author's practice in difficult presentations and his methods of diagnosis and treatment. Churchill is the first author we have found who recommends that the operator *soap* his hands before beginning work, which is interesting when we reflect that Semmelweis was then a medical student, and Lord Lister an eleven-year-old school boy.

Churchill makes no mention of external version, or even the possibility of a combination of external and internal methods. The first publication regarding external manipulation seems to be that of Wiegand, whose article "On an external manipulation whereby, in labor, the malposition of the fetus may be corrected" appeared in Hamburg in 1807. Wiegand's plan was to make a vaginal examination to find out exactly how the fetus lay in the uterus. An extended experience led him to believe that in most of the so-called "transverse presentations," the position of the fetus was actually oblique, so that either the breech or the head more nearly approached the os. By external pressure on either end of the fetus he found that he was often able to bring to the os whichever end lay nearer. As he more often found the head close to the os, he used cephalic version

more frequently than any other form. All that he did with his other hand was to guide the presenting part when he had forced it to the os; apparently he did not insert his hand into the uterus at all. Thus he avoided the uterine "inflammation" so frequently mentioned by the older writers as a sequela to their versions. We do not know whether he used Churchill's soap upon his hands or contented himself with the warm beer and butter of his compatriot, Justine Siegemundin.

Wiegand also assisted external version by flopping his patient from side to side thereby making an auxiliary of gravitation. This, strangely enough, "was tedious and troublesome to the parturient woman." He likewise availed himself of the action of the uterine contractions. When he had finally succeeded in bringing the fetus to a position where delivery could proceed according to Nature, he sat back and waited, except in those cases where immediate delivery was indicated, and these—in accordance with the older obstetric practice—were very few indeed.

It is not surprising that Wiegand's method did not gain great favor among obstetricians—especially the French and Irish who were at that time the leaders of the profession—as such measures were better adapted to the phlegmatic temperament of the German *frau,* than to the more high-strung and impatient mothers of other countries. It received no attention in England for more than fifty years, the only improvement over the old methods of version being apparently that of Robert Lee, who describes how in cases of rigid os, and very strong uterine contraction he was occasionally able to introduce two fingers, and with these push the head away from the os, and in the same manner manipulate one after another the parts presenting after the head. With good luck the feet would eventually come in contact with the *accoucheur's* fingers, and it might then be possible to bring down one of them and accomplish delivery somewhat after the manner recommended by Radford.

Few obstetricians, however, cared to depart from the teachings of the seventeenth and eighteenth centuries; if podalic version was possible, it was used, otherwise craniotomy, evisceration, or any other butchering procedure, was looked upon as the only possible or proper course. The improvement in the designs

of forceps, and increased skill in using them somewhat reduced the slaughter of the innocents, but mutilating operations upon living children were still very common.

On January 19, 1847, however, a new era in midwifery began. Three months previously Morton had successfully employed ether as an anesthetic during a surgical operation, and the news of his discovery traveled rapidly to the other side of the ocean. In the words of the Scotch *Monthly Journal of Medical Science:*

"On the 19th of last month, Professor Simpson tested the effects of the ether inhalation in a case presenting one of the most painful and difficult forms of parturition. The patient was lame and deformed, from disease of the hip joint in early life: and the promontory of the sacrum could be felt projecting so far forwards, as to diminish the conjugate diameter of the brim of the pelvis to about 2½ inches. At her first confinement, after being upwards of three days in labour, two excellent accoucheurs applied the long forceps, and attempted in vain for about two hours, to extract the head. They then broke down the skull with the perforator, and emptied the cranium; but still in this greatly diminished state, the head required nearly an hour's strong traction with the crochet, before it could be made to pass the contracted brim. She was strongly advised to have premature labour induced during her next pregnancy, but failed to inform her medical attendant, Mr. Figg, till she had arrived near the ninth month, when it was considered too late to interfere. On the present occasion (her second labour), the umbilical cord was found presenting, with the head lodged high upon the brim, where it remained without making the slightest progress, for several hours, or offering at all to pass down into the pelvic cavity.

"Professor Simpson had, upon the results of some previous cases of a similar kind, resolved to avoid if possible the use of the crochet or other instruments, and to extract the child by turning. He effected this by grasping easily one knee; but after the body and the extremities were born, extreme exertion was subsequently necessary to extract the head. At last, however, it passed in a compressed and flattened form. The child gasped several times after birth, but respiration could not be estab-

lished. Some time before the turning was attempted the woman was fully placed under the influence of sulphuric ether."

Professor—or as he is known to all students of obstetrics, Sir James Young—Simpson, was not able to present his dwarfed and twisted patient with a living child, but at any rate, he did not chop it into pieces in order to effect its entrance into the world. The next evening he showed the body of the child to the Edinburgh Obstetrical Society and informed his colleagues that he considered turning to be a desirable alternative for craniotomy and the long forceps when "the head had been morbidly detained at the brim of the pelvis", and he "believed it to present various advantages over embryulsio. It gave the child a chance of life; it was more safe to the mother, because it could be performed earlier in the labour and more speedily; it enabled us to adjust and extract the head of the child through the imperfect pelvic brim in the most advantageous form and direction, the head flattening *laterally* under the traction * * * * * * the sides of the cranium might become very greatly compressed or even indented * * * * * without necessarily destroying the child."

In November of the same year (1847) Dr. Simpson substituted chloroform for ether and the next year reported the case of a mother who had been three times previously delivered of dead children, by embryulsio and long forceps. At the beginning of her fourth labour "she was first seen by Mr. Figg" and later by "her ordinary medical attendant" Dr. Peddie, who busied himself with three different pairs of "long forceps", but all to no purpose. As "the child's heart was heard distinctly with the stethoscope" Sir James who had been called in consultation, suggested that the instruments be laid aside, and he be permitted to "try to deliver her by turning the infant—compressing and indenting the flexible skull of the fetus instead of perforating it, thus affording some chance of life to the child, and more chance of safety to the mother. The patient was placed under the influence of chloroform still more deeply than when the forceps were used, in order, if possible, to entirely arrest the uterine contractions. I passed up my hand into the uterus, seized a knee, and easily turned the infant; but very great exertion and pulling was required to extract the child's

head through the distorted brim. At last it passed, much compressed and elongated. The child was stillborn, but by applying the usual restorative means, it speedily began to breathe and cry. The child continues well, and the mother has made a rapid recovery."

Like all other innovations the use of chloroform anesthesia in obstetrics was fiercely opposed, but in England especially it rapidly gained in favor, due perhaps to the fact that Sir James successfully administered it to no less a personage than Queen Victoria, during one of her numerous confinements.

Simpson became an ardent advocate of podalic version under chloroform anesthesia as a substitute for craniotomy, then the usual procedure in all cases of contracted pelvis, and his lectures and clinical practice on this subject undoubtedly saved the lives of thousands of future citizens.

The "Mr. Figg" referred to by Simpson was so impressed by "the triumphant termination" of the case reported that he felt it "imperatively demanded a verdict in favour of the version", and "naturally suggested" to his mind that "if delivery could be effected so rapidly, easily and safely, under such formidable circumstances", how wonderfully efficacious it would be when the conditions were normal. He accordingly began to employ podalic version, under complete chloroform anesthesia when the patient—or her relatives—did not forbid him to use it, in all cases where labor was difficult and bade fair to be protracted, abandoning the use of forceps, even when the vertex presented, and notwithstanding the fact that "the impropriety of introducing the hand into the uterus" had been vividly and early impressed on his imagination by his instructors. After a few years Figg came to believe that "the argument proving the absence of danger peculiarly connected with the act of version in such cases could be enlisted in favour of its adoption as a general rule. The results derivable being an abridgement of the agony of the patient, the economy of her mental and physical energy, the prosperity of the infant, and the limitation of your own attendance."

In November, 1858, Figg published the results of his experiences in the *Medical Times and Gazette* of London. In an elaborate and—at times—florid essay he sets forth the argu-

ments in favor of his method, gives reports of several cases, and a detailed exposition of his technic. In regard to the condition of the infants brought into the world by his method he remarks that "they are generally still from two to five minutes, and in some cases, half an hour's duration. In many instances the first arm brought down is a little painful when moved for a day or two. I confess with humility that I have even broken four arms, which, though they occurred in cases of great pelvic contraction, were attributable to my own mismanagement in pressing over the shaft of the os humeri instead of following its line to the elbow. Should you commit the same error, with similar result, be not too candid to the relatives, but at once by your own dictum transubstantiate the injury into a slight sprain received by the infant striking his shoulder against the backbone of the mother while actively prosecuting his uterine gambols. It will pass current, more especially if you appeal to her experience, when it is sure to be corroborated by a quotation of the day and hour of occurrence." The author concludes by saying that if he is "entitled to any credit at all, it is for the candid avowal of a practice, that some, under fear of professional censure, would have adhered to but concealed. The operation was ancient, but nearly obsolete, and its revival by Dr. Simpson in particular circumstances, led to my adoption of it in general cases."

Figg's "fear of professional censure" was well grounded. His "candid avowal" was greeted by a perfect howl of protest from the conservative British obstetricians. One wonders why the lead which set up the pages of the *Medical Times and Gazette* failed to melt between the typesetter's fingers, so hot were the imprecations hurled at the intrepid "Mr. Figg". Francis Ramsbotham wrote Robert Lee that he "had never dreamed that any man in his senses would have the hardihood to recommend that all natural cases should be artificially converted into footling cases, or to announce that such an interference with Nature's ordinances had become in his practice an established rule. The practice advocated by Mr. Figg appears to be so mischievous and dangerous in its tendency, that I consider you will be doing a service to the cause of humanity, if you will notice it publicly with that reprobation which I am convinced you, in common with all well-judging obstetricians, must entertain

toward it." Dr. Lee cherished the more charitable "conviction that the author was insane or not in earnest, and was practicing a hoax on the Profession." He even had grave doubts of the corporeal existence of any "Mr. Figg", though he was vouched for by Sir James Simpson himself. He "viewed the doctrines inculcated in the paper as atrocious."

It may be remarked in passing that both Lee and Ramsbotham regarded the use of anesthetics in labor, as "contrary to the laws of Nature" and tending to a state of anarchy by depriving the parturient woman of her full due of pain and anguish.

Henry Harris "quite agreed" with his more famous colleagues, and thought "Mr. Figg's obstetric practice * * * * * very dangerous work and Medical men should express their opinion against such conduct." They did; notwithstanding the recommendation of Henry Oldham, to whom "Mr. Figg's proposal of delivery by turning in natural labor" appeared to "be the worst specimen of a corrupt and cruel midwifery practice" that he had "ever met with. It is too bad and revolting to be attractive to the least experienced of educated men; and I think it would do more harm to notice it than to leave it alone."

The loudest outcry of all came from Dr. Peddie, who, it will be recalled, was the "ordinary medical attendant" of the patient whose successful delivery by Sir James Simpson first gave Figg the idea of departing from the accepted precepts of British obstetrics. He regarded "the opinions expressed" in Figg's paper as "extraordinary, inculcating as they do practices most hazardous to life, and lowering to the Profession of Medicine—alike subversive of the laws of nature and morality." He took especial exception to the author's recommendations for the use of suggestion after the modern psychiatric manner, in cases where the child's arm had suffered damage in the course of delivery. "What an advice to give to the young practitioner who, after being instigated to a reckless interference with the ordinary processes of nature, is instructed how to cover the mischief perpetrated." Dr. Peddie could not "conceive anything more condemnable than * * * * * a recommendation to adopt this short-hand mode of completing a natural labour, that an otherwise inconvenient sederunt at the bed-side may be

shortened; and I cannot fancy anything more monstrously unjustifiable and perilous than for any man, however dexterous he may be, to think as lightly of manipulating in the living uterus as if he were rummaging in a caoutchouc bottle. The proposal is a shocking reversal—a literal turning upside-down—of the plan of nature."

A few flowers fell among the brick-bats. As we turn the pages which the *Medical Times and Gazette* devoted to *General Correspondence* we find here and there a champion of "Mr. Figg's" opinion and practice. To one of these who asked for figures, we find Figg himself replying that his deliveries during the year just passed (1858) had averaged two a week with but one death—"the second child of a woman aged 45, born to a second husband after a widowhood of fourteen years." He also stated that not one infant alive when the operation began, came into the world dead, or died "in convulsions a few hours afterward" as some of his opponents had suggested.

Although Figg does not appear to have convinced his contemporaries of the advisability of employing version as a routine method in all kinds of presentations, he stuck by his guns manfully and two years later we find him recorded in the proceedings of the Obstetrical Society of Edinburgh as still pursuing his original plan of employing version, as "nine days before" he had made use of it in a case where "although no chloroform had been administered, the patient would never have known that she had been subjected to any kind of operation, had she not made the shortness of the time spent in her delivery a ground for refusing to pay the usual honorarium," and the renewed interest which he stirred up in this neglected technic is abundantly evidenced in the British medical literature of the next few years.

We soon find Alexander R. Simpson, nephew and pupil of Sir James, describing his success in employing version under chloroform anesthesia, instead of attempting delivery by the long forceps, and a little later "Mr. Pearson" of Staleybridge writes the *Medical Times and Gazette* that Mr. Figg is mistaken in attributing the revival "of the operation of turning" to Sir James Simpson, to his certain knowledge it had been done in the town of Staleybridge for at least sixty years. In 1860

Figg published a second exposition of his theory and practice of version, and there was another—but much feebler—protest from those of his colleagues to whom his views proved unacceptable. Two years later we find Figg's practice discussed in a paper presented by Mr. Rigden before the East Kent District Medical Meeting, but the impression after reading the discussion which followed, is that—in East Kent at least—the crochet and the perforator were still in active service.

Gradually, however, the possibilities of version came to be more and more considered. Robert Barnes wrote a long *Clinical Examination of the Value of the Operation of Turning in Labour Obstructed Through Coarctation of the Pelvic Brim,* which attracted a good deal of attention when first published in the London *Lancet.* He declared that "craniotomy is carried to a frightful excess. As holding out a hope, at least, of lessening that excess, it has become a matter of urgent moment to direct our most anxious and candid attention to the application of turning." But of far more importance was the contribution made this same year (1860) by John Braxton-Hicks who (quoting from Garrison) "made an epoch in the history of obstetric procedure by the introduction of podalic version by combined external and internal manipulations, which forms a connecting link across the ages with Ambroise Paré's famous paper."

Full priority for this idea should not, however, be accorded to Hicks, because as early as 1854, one of our own countrymen, Marmaduke Burr Wright, read at the annual meeting of the Ohio State Medical Society a "Prize Essay" on *Difficult Labors and Their Treatment* in which he detailed a number of cases where he had successfully employed combined version, and thus described his method:

"Suppose the patient to have been placed upon her back, across the bed, and with her hips near its edge—the presentation to be right shoulder, with the head in the left iliac fossa—the (accoucheur's) right hand to have been introduced into the vagina and the arm, if prolapsed, having been placed, as near as may be, in its original position across the breast. We now apply our fingers upon the top of a shoulder and our thumb in the opposite axilla, or on such part as will give us command of the chest, and enable us to apply a degree of lateral force. Our

left hand is also applied to the abdomen of the patient over the breech of the fetus. Lateral pressure is made upon the shoulders in such a way as to give the body of the fetus a curvilinear movement. At the same time the left hand applied as above, makes pressure so as to dislodge the breech, as it were, and move it toward the center of the uterine cavity. The body is thus made to assume its original bent position, the points of contact with the uterus are loosened, and perhaps diminished, and the force of adhesion is in a good degree overcome. Without any direct action upon the head it gradually approaches the superior strait, falls into the opening, and will, in all probability, adjust itself as a favorable vertex presentation."

Six years after the publication of this "Essay" before another annual meeting of the Ohio Medical Society, Wright hotly defended his stand in regard to the superiority of cephalic version in shoulder presentations, which had been questioned by a certain "Professor Miller" in his "highly valuable work on Obstetrics." "Cephalic version" Wright asserted "is not used as a means of artificial delivery, but to change a bad presentation into a good one, that the natural powers of delivery may be efficient and successful. There will be time enough when speedy delivery is demanded, from exhaustion, from hemorrhage, from convulsions, to discuss the question which is best adapted to the case, cephalic or podalic version."

When Hicks brought forward his method he went further than Wright had done and by adapting and expanding the plan advocated by Wiegand two generations before, gave us the "combined version" which is still known and used as the Braxton-Hicks method. In describing his technic Hicks made no reference to the American physician who had partially preceded him. Very likely the name of Wright could not then travel so fast from Ohio to England as it did some years later when it had "taken unto itself wings." Hicks says "Indebted, then, to the Germans for the knowledge of the important fact that the child can be turned in utero from the outside; and to our own countrymen"—that is Robert Lee's "two finger method"—"for showing us the possibility of pushing the child round by means of one or two fingers passed through the os, I will endeavor to show how that by the simultaneous combination of these two

plans, each acting upon opposite ends of the fetus, a degree of certainty and celerity may be obtained, of which each alone is entirely incapable."

Hicks' chief aim was to avoid as far as possible, the hazards attendant upon putting the whole hand into the uterus. He introduced his left hand into the vagina only far enough to permit him "to reach a finger's length within the cervix." He first ascertained the position of the head and its direction; then placing his right hand on the abdomen of the patient toward the fundus, he proceeded to determine the location of the breech. "The external hand then presses gently but firmly the breech to the right side; as it recedes, so the hand follows it either by gentle palpation, or by a kind of gliding movement over the integuments, while at the same time the other hand pushes up the head in the opposite direction, so as to raise it above the brim. When the breech has arrived at about the transverse diameter of the uterus, the head will have cleared the brim and the shoulder will be opposite the os. That is pushed on in like manner as the head, and after a little further depression of the breech from the outside, the knee touches the finger and can be hooked down by it. Should it be difficult to hook down the knee, depress the breech still more, and it will be almost always the case that the foot will be at hand. It will sometimes render turning more easy if, as soon as the head is above the brim, we pass the outside hand beneath it, and push it up from the outside alternately with the depression of the breech."

It was, however, "in changing the position of the fetus from the transverse, and its varieties, to head presentation, that the advantage derived from the external hand is the most marked. Should the shoulder, for instance, present, then push it with one or two fingers on the top in the direction of the feet. At the same time pressure by the outer hand should be exerted on the cephalic end of the child. This will bring down the head close to the os. The head will play like a ball between the two hands, it will be under their command, and can be placed in almost any part at will. Let the head then be placed over the os, taking care to rectify any tendency to face presentations."

This procedure appears so simple that it is most surprising no one had ever before advocated it; it is still more surprising

that it was not thereafter very often employed in Great Britain, and apparently almost completely ignored in the United States. Although Sir James Simpson and Braxton-Hicks were universally conceded the foremost obstetricians of their time, and both, as we have seen, were warm advocates of the employment of version, even their prestige and influence were not sufficient to create any strong disposition to employ version in general obstetric work. If a champion did occasionally make himself heard in favor of a more general employment of the operation, he was at once "howled down" by the majority of those who listened to him. Thus the Philadelphia Obstetrical Society in 1875 witnessed a spirited controversy between William Goodell and Ellwood Wilson, with a periodic chorus of lesser lights, concerning the wisdom of employing podalic version in cases of contracted pelvis. A thoughtful perusal of this controversy leads one to the conclusion that Dr. Goodell who declared version to be preferable to the employment of forceps when pelvic measurement was three inches or less, had rather the best of his opponent, who upheld the superior advantages of forceps, inasmuch as Dr. Wilson was ultimately obliged to take refuge behind the statement that "the versionists aim to bring to naught the promise that 'in sorrow thou shalt bring forth children'." His opponent—who, it may be remarked in passing, was the son of a famous foreign missionary, and a man of great personal piety—retorted that this and the corresponding one on man were no new arguments, and "a great deal of respect should be shown to them on account of their age. From time immemorial they have been the stock arguments against all inventions and improvements in the arts and sciences."

Dr. Goodell's advocacy of the more frequent use of version seems to have caused a good deal of interest among his Philadelphia colleagues, but current medical literature—which is fairly abundant from that time forward—gives no great amount of space to a consideration of this particular division of obstetrics. More than two years later the *American Journal of Obstetrics* published an article on *Extra-Abdominal Version* by Leopold Ellinger, a well-known German obstetrician, who advocated practically the same method as that put forward by his countryman Wiegand, more than seventy years before, ignoring

the improvements developed by Braxton-Hicks. That such an article should have been printed without comment by the only obstetrical journal at that time published in America, would seem to be an evidence that the whole subject of version was receiving very little attention in this country.

The position assigned to it at the opening of the present century has been ably summed up by James C. Cameron of Montreal in his contribution to Hirst's *American System of Obstetrics.* He considers the whole subject under two heads: *Cephalic Version* "usually performed in order to improve or rectify a relatively unfavorable position;" not often employed when speedy delivery is imperative; and *Pelvic Version,* under which he includes turning to the breech, which might occasionally be tried after cephalic version had failed; and turning to the feet, which is indicated in transverse presentations, when cephalic version is impractical; in head presentations, under such circumstances as placenta previa, prolapse of the cord or deformity of the pelvis; or in urgent cases, such as eclampsia, hemorrhage, uterine rupture, or pressure on the cord.

Under cephalic version he discussed Pinard's external method, which depended upon repeated abdominal palpation during the course of pregnancy. Should the fetal head not enter the brim by the beginning of the eighth month, Pinard proceeded to rotate it there by external manipulation, and retained it in place by an abdominal supporter which the mother wore until the onset of labor. Cameron believed that "when the pelvimetry of primiparae is more generally practiced, and physicians are able to estimate more correctly the various kinds and degrees of pelvic contraction * * * * * external cephalic version, followed by the high forceps operations, will be generally preferred to podalic version, and will yield better results for both mother and child." The principal contraindications to cephalic version are prolapse of the funis and imperfect motility of the fetus, this last being caused by multiple pregnancy, breech presentations in primiparae, shoulder presentations, or an advanced stage of labor.

The essential conditions for the success of podalic version are: that the os be dilated, or easily dilatable; that the uterus be not so firmly contracted upon its contents that rotation of the

fetus *in utero* be rendered difficult or dangerous; that the presenting part be not so firmly engaged that it cannot be safely dislodged; and finally that the pelvic conjugate be not less than two and three-quarters inches.

In regard to technic Cameron tells us that "English obstetricians place the patient on the left side and introduce the left hand. The French and Germans place the patient on the back, and use the right or left hand according to circumstances. In dorso-anterior transverse positions the French select the same hand as the presenting shoulder, while the Germans use the hand corresponding to the side on which the feet are to be found. In dorso-posterior transverse presentations both French and Germans use the same hand." But whichever technic he has intended to follow "once the operator has introduced his hand into the uterus, he should not withdraw it, if possible, until version is complete, even if it turns out to be the wrong hand theoretically; he should merely adopt the form of manipulation (French or German) for which the hand *in utero* is best suited." A correct diagnosis of the relative position of fetal and maternal parts is far more important than the choice of hand to be used.

Braxton-Hicks' method is discussed at length and illustrated by a number of figures. To the question *Should one foot or both be brought down, and if only one, which?* Cameron makes answer that "it is now pretty well agreed that if possible only one foot should be brought down."

"*Which foot or knee should be selected?* In dorso-anterior positions most authorities agree that the nearest (low-lying) foot is the proper one to bring down. In dorso-posterior positions there is more difference of opinion: Tarnier, Charpentier, Depaul, Martin, Scanzoni, Lange, Schroeder, etc., advise the lower foot, while Hohl, Kristeller, Simpson, Barnes and others prefer the upper. Barnes strongly advocates grasping the knee instead of the foot, and prefers the upper one in all cases. Scharlan and Von Haselberg, on the other hand, contend that when the upper foot is drawn down, it is apt to become crossed with the lower one, twisting the body so as to cause injurious pressure, or making turning impossible. According to Fritsch, it is all the same which foot is grasped, because the

back is directed posteriorly during version, and comes to the front only during extraction. According to Pajot, the best foot to seize is the one which can be held best and most firmly." It is Cameron's own opinion that version can be successfully accomplished by many different ways, and his own suggestions are not very different from Paré's hair-ribbon method.

"If the second foot is beyond reach, or if traction upon both limbs does not cause the fetus to rotate, an attempt should be made to dislodge the impacted shoulder. * * * * * Goodell recommends bringing down the upper arm and rotating the child on its long axis, or else introducing into the vagina the hand corresponding to the child's head, and gently pushing the presenting part away from the cervix."

Answering the question *Should extraction immediately follow version?* Cameron quotes Winter's "analysis of 310 uncomplicated cases of transverse presentation which occurred in the Berlin Clinic between 1876 and 1884. Winter concluded—(1) that version should not be performed until the os is sufficiently dilated to permit of extraction; (2) that the best results for the child are secured when extraction immediately follows version. Dohrn of Königsberg accepts the first of Winter's propositions but not the second, and contends that the interests of both mother and child are best secured by the spontaneous expulsion of the fetus, and that extraction should be performed only for definite indications. He says that when extraction immediately follows version the position and rotation of the fetus are apt to be different from what they would have been in spontaneous delivery, and claims that the natural coaption of the fetus to the parturient canal is less dangerous than the artificial. In one hundred and fifty-two cases in his clinic in which extraction immediately followed version, twenty-two children were lost, while in twenty-nine cases delivered spontaneously after version there was not a single fetal death. Upon the whole, Continental opinion so far seems to side with Winter and Schroeder, and the teachings of the Berlin school to guide practice in this respect."

Summing up the difficulties and dangers of podalic version, Cameron considers strong uterine contractions to be the greatest impediment. To overcome *tetanus uteri* he recalls the bleed-

ing and opium recommended by Roberton, "but at the present time chloroform and gentle continuous pressure are preferred." The means usually recommended for overcoming obstructions in the cervix, "such as undue rigidity, incomplete dilatation, spasmodic contraction, placenta praevia, etc.," are "the inhalation of chloroform, opium or alcohol internally, hot baths and douches, the application of cocaine solutions to the cervix, a weak faradic current, dilatations manually or by rubber bags, and, as a last resort, multiple incisions of the external os."

Prolapse of the arm, for so many centuries the Waterloo of *accoucheurs,* "nowadays is not considered a disadvantage; indeed it is sometimes of use in enabling the attendant to arrive at a correct diagnosis of the child's position *in utero.* * * * * * When the arm is prolapsed a noose of tape should be fastened to the wrist, and held moderately tight by an assistant while version and extraction are being performed. The tape enables the arm to be drawn out of the way of the operator's hand, and prevented from rising beside the child's head and complicating extraction. The swelling and lividity of the prolapsed arm are no index to the child's condition as to whether it is living or not."

Impaction of the shoulder, Cameron regards as a very serious complication. "Decapitation or embryotomy may be the only means of effecting delivery if the shoulder has been long impacted and the uterus has become moulded to the contour of the fetus."

At the time Cameron wrote the value of anesthetics during the extraction of the fetus was still an open question. It was his personal opinion that "in easy cases an anesthetic is seldom required, but when there is much difficulty or delay deep anesthesia is found to facilitate extraction and diminish the risks of both mother and child." The technic of extraction which is given at considerable length is based on the method of Robert Barnes, the English obstetrician, and reference is also made to Smellie's method of delivering the after-coming head, where the index and middle fingers of the *accoucheur's* hand are applied one on each side of the child's nose, though "in difficult cases no time should be wasted with this method."

Veit's method—introducing the fingers into the child's

mouth—first described by Mauriceau in 1668—is now used in Germany, where formerly in all difficult cases the forceps were employed, except in those where pelvic contraction is considerable.

"If much resistance is offered to the descent of the head through the brim, it may be found difficult or impossible to flex the head upon the trunk by means of the Smellie-Veit method; for when traction is made the chin can be pulled down upon the breast, but the head fastened in the brim refuses to follow. In such a case it would be better to combine the two methods; first secure good flexion by the Smellie method, and then deliver by the Smellie-Veit"—that is, combined traction upon chin and shoulders. "If the head tends to extend during extraction, the fingers had better be kept applied to the upper part of the face, and not introduced into the mouth at all."

Should this maneuver fail, the Prague method should be employed. This is the method suggested by Prezos in 1573 and derives its modern name from Kiwisch of Prague, who "resuscitated" it in 1846. "The fingers of the left hand being hooked over the nape of the (child's) neck, the right hand grasps the child's feet, and the body is swept as far back as possible over the perineum; traction is then made vertically downward with both hands, care being taken meanwhile to maintain pressure upon the fundus. As the head slips down into the pelvis, the feet are rapidly raised toward the mother's abdomen, the neck pivots upon the fingers of the left hand, and the head is shelled out of the pelvis."

The Wiegand-Martin method of extraction of the after-coming head consists of taking a firm hold on the lower jaw of the fetus with the first and second fingers of that hand of the *accoucheur* the palmer surface of which corresponds to the child's abdomen. "The other hand seizes the occiput through the abdominal walls and exerts powerful pressure in the direction of the axis of the superior straight."

"Considerable difference of opinion," Cameron tells us, "exists as to the utility of the forceps in the delivery of the after-coming head. Advocated strongly by such men as Smellie, Busch, Rigby, and Meigs, and in later times by Barnes, Cazeaux, Tarnier, Charpentier, and others, the forceps operation is op-

posed with equal vehemence by an influential section of the German school. Schroeder used to say that the introduction of the forceps had cost many children their lives and brought discredit upon podalic version. Whatever difference of opinion may exist as to its value in ordinary breech cases, this instrument is undoubtedly of service after version in some cases of contracted pelvis. I am sure that I have seen some children safely delivered by means of forceps who would otherwise have perished, and I am equally sure that I have seen children allowed to asphyxiate who might have been saved by a timely use of the forceps. Forceps will be found most useful when the head is arrested at the brim, owing to disproportion between the pelvis and the foetal head," and will be found particularly useful "when the head is prevented from descending by stricture of the os or cervix, or contraction of the cervix around the child's neck.

"When manual extraction is to be tried in a difficult case, the Smellie-Veit or Wiegand-Martin method should first be practiced; if that fails, the Prague method * * * if steady manipulation for two—or at the most three—minutes fails to deliver the head, no more time should be wasted: the forceps should be applied without delay.

"Except in cases of considerable pelvic contraction, the forceps operation may be regarded as comparatively harmless in skilled hands, while internal version is always a serious undertaking, involving more or less danger for mother and child even when performed with the greatest skill. The unpracticed operator is far less likely to do harm with the forceps than with version. Whenever, then, it comes to a question of choosing between forceps and internal version, the forceps should be selected unless especially contraindicated, because the operation will be easier, and at the same time safer for mother and child."

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## CHAPTER III

## PRESENT DAY EMPLOYMENT OF VERSION

We have seen that at the opening of the twentieth century version was looked upon as an emergency operation, to be employed only when the forceps had failed, or was for some reason obviously impractical. Text books usually devoted but a few pages to a consideration of the possibilities and advantages of turning, and many general practitioners with a large amount of obstetric practice were absolutely ignorant of the required technic. Before proceeding further it will be enlightening to observe how much progress has been made during the past two decades in manual obstetric operations, and to what extent they are practiced today by the recognized leaders of the profession and the best known maternity hospitals.

Joseph B. De Lee of Northwestern University in the 1915 edition of his text book remarks that "Few operations are so satisfactory as version, but none is more dangerous if performed without due consideration of the conditions." The conditions which he regards as essential for the performance of version are as follows:

(1) The cervix must be dilated enough to allow the hand to pass, and if the version is done in the presence of an indication for extraction also, the cervix must be fully dilated; (2) the pelvis may not be too much contracted—this in view of the extraction to follow; (3) the uterus may not be in tetanus or retracted over the fetus—that is, the case may not be one of neglected transverse presentation with the uterus on the point of rupture; (4) the child must be mobile, that is, not engaged, or in the process of spontaneous evolution; (5) unless the version promises to be exceptionally easy, the child must be living.

De Lee further says: "To know when it is safe to turn and when the risks of rupture of the uterus are too great requires much experience and delicate judgment. It is impossible to lay down a set rule as to how long after the rupture of the mem-

branes a version is still permissible. All depends on the degree of retraction and contraction of the uterus."

The use of that hand the palm of which "will be against the breech when in the uterus" is recommended, and version is to be made on one foot if possible. Delivery by the natural process should be allowed to follow version, if the fetal heart sounds are strong, and no other indications make immediate delivery imperative. "Expediency—for example, the accoucheur not having time to await the natural expulsion of the child—is a poor indication for extraction."

The employment of version in contracted pelvis, De Lee regards as "a matter of personal choice. British accoucheurs, prominently Kerr, have given up prophylactic version in favor of prolonged expectancy and forceps, which is the position I take in the matter."

"The main indication for Braxton-Hicks' version is placenta praevia. It is sometimes done for prolapse of the cord, occasionally in shoulder presentations, and very exceptionally to turn the head down in breech presentations."

The prognosis of version "depends largely on the skill of the operator. The danger of rupture of the uterus during version cannot be too strongly emphasized." Unless prolapse of the cord, abruptic placentae, or too long delay in turning take place, the operation itself does not increase the child's hazard.

J. Whitridge Williams of Johns Hopkins has never found it necessary to apply forceps to the after-coming head, and believes "it is but rarely called for if the obstetrician has made himself familiar with Mauriceau's maneuver." Cephalic version he regards as of limited usefulness, and he has never been successful in retaining the head in presentation by the use of abdominal binders and supports. "Podalic version is indicated in two great groups of cases—namely, in transverse or oblique presentations, and in head presentations in which it is believed that delivery can be more safely and more rapidly accomplished after version. Generally speaking the operation is indicated in all cases requiring prompt delivery when the head is floating at the superior strait, or is but slightly engaged, provided there is no great disproportion between its size and that of the pelvis. In such circumstances it is usually a much safer procedure than

the application of the high forceps * * * in eclampsia and hemorrhage, version and extraction supply the readiest and most conservative method of delivery."

Among recent text books I have found that of George Peaslee Shears (1917) gives more extensive consideration to version than any other, and the author's attitude in regard to its importance may be gained from the remark in his preface—apropos of the plan upon which most obstetric text books are constructed: "If in the course of a difficult version the operator finds it impossible to grasp a knee or foot, the difficulty may sometimes be obviated by the simple expedient of turning the patient upon her side. This is one of the most important facts in the whole range of clinical obstetrics, and yet, turning to some standard text book, we find that it is either unknown or unnoticed, but observe at the same time that considerable space is devoted to the subject of the cause of menstruation."

This author feels that he "cannot too strongly emphasize the fact that breech extraction is an operation of difficulty and importance. Once begun it must be finished within a few minutes or the child will be lost. Previously he states that "some teachers advise that when version is complete the danger has passed and extraction may be delayed. In my opinion this is a mistake. * * * As soon as version is complete the fetal heart should be auscultated and, if signs of asphyxia are noted, delivery should be hastened. This precaution, so often neglected, is of the greatest importance."

Although Shears calls the forceps operation "the most important in surgery" because "two lives are at stake" he believes internal podalic version to be indicated in face and brow presentations, in posterior positions of the occiput, and when the head is at or above the brim and cannot be made to engage. "Experience should soon teach the observant accoucheur when to lay aside the forceps" in cases of delayed first stage in which the instrument fails, for "untold harm is often done by prolonged and forcible traction in cases that are unfavorable for the forceps but may be easily delivered by version." He cautions that "even in easy versions the entrance of air into the uterine cavity, or the sometimes unavoidable handling of the cord, may cause premature inspirations, with resulting asphyxia, and when the

fetus is of large size there is often unexpected delay in the bringing down of the extended arms and the delivery of the aftercoming head. It must be admitted, however, that the skill of the individual operator plays a large part." Moreover, version "should not be undertaken in the case of a dead fetus unless the operation promises to be an easy one. It is never justifiable to subject the mother to a difficult version in order to secure the merely esthetic advantage of delivering an unmutilated child."

This author questions the authority of "those who write from an academic rather than a practical standpoint" in stating that version cannot be performed if any great length of time has elapsed since the rupture of the membranes, if the head is low in the pelvis, or before the cervix is fully dilated. In the first two emergencies, he believes the only way to find out whether delivery can be accomplished by version, is to make "a cautious attempt under anesthesia," and, inasmuch as very often "to wait for complete cervical dilatation would be to wait until both mother and child succumbed," he believes that "when version is indicated, dilatation of the cervix is indicated, and should be performed." He makes use of the largest size de Ribes' bag, or—if time presses—employs manual dilatation. "The importance of thorough dilatation and paralysis of the cervix as a preliminary to version cannot be overestimated."

Hirst devotes fourteen from the more than one thousand pages making up his *Text-Book of Obstetrics* to the consideration of version. "The most important and the most frequent indication for version is found in a transverse position of the fetus *in utero.*" Other indications enumerated are contracted pelvis "when it is thought that the child's head can be brought through the contracted pelvic canal more easily with the small end of the wedge coming first than last;" the necessity of rapid delivery, "as in eclampsia, premature detachment of the placenta, rupture of the uterus, embolism, and death of the mother;" malpositions of the head; placenta previa with the head presenting; and prolapse of the umbilical cord, if the cord cannot be replaced and retained in the uterine cavity. Version should never be attempted if the presenting part has passed the external os and is firmly engaged in the pelvic canal; if the contraction ring is so high that a rupture of the lower uterine segment is imminent;

or if the cervix and vagina are "undilated and undilatable." Hirst recommends that after the completion of podalic version, the patient should be "allowed to expel the child spontaneously until the umbilicus appears in view" but thereafter "the attendant must put forth every effort possible to secure the most rapid delivery." For the extraction of the after-coming head he described several classic methods, Mauriceau's, Wiegand's and others. He also commends the modification suggested by Don Carlos Guffey of Kansas City in 1911, in the delivery of the first arm after podalic version has been done. Guffey's suggestion was that while one hand of the operator held the feet at the vulva, the other hand should be introduced "into the uterine cavity and an arm seized—preferably the right—since the bringing of this arm into the left sacro-iliac fossa will cause the head to engage in the more desirable right oblique with the occiput anterior." Traction is then made upon the fetal hand until it emerges at the vulva with the breech. The arm and trunk are then grasped and delivered together "with surprising ease." Guffey claims that this method takes less time, and therefore increases the child's chance of life, that the fetal humerus and clavicle are much less likely to be fractured, and laceration of the maternal tissues is not so severe or frequent, as is usual during forced rapid delivery.

In the *Manual of Obstetrics* prepared by Edward P. Davis for use by the students of Jefferson Medical College, placenta previa is given as the principal indication for combined version by the Braxton-Hicks method. "The indications for internal podalic version are transverse position shoulder presentation, brow and parietal bone presentation, prolapse of the umbilical cord, anomalous position of the head when the forceps slip when applied and forceps delivery is dangerous," and occasionally "in flat pelvis where it is desired to bring the fetus through with the bifrontal diameter of the fetal head in relation with the shortened anteroposterior diameter of the pelvic brim." Internal version should not be employed in a dry, tightly contracted uterus; where the internal conjugate is less than 9 cm.; if the fetus is very large, or a monstrosity; or if a tumor blocks the birth canal.

"The operator must remember in all manipulations to turn the fetal back toward the pubis, as otherwise difficulty may be experienced in delivering the after-coming head." The technic of delivery is outlined according to the usual methods, with directions for application of forceps. Considerable stress is laid upon the injuries which both mother and fetus are likely to sustain.

The last edition of *Herman's Difficult Labour,* revised by Carlton Oldfield, devotes an entire chapter to *Turning,* giving as indications, transverse presentation, placenta previa, flat pelvis with bad head presentation and conditions unfavorable for cesarean section; face presentation, prolapse of the funis, accidental hemorrhage; and "Lastly, as turning is the best way in which, without instruments, you can hasten delivery; as in most of the rarer kinds of obstruction to delivery turning is the best practice; and as delivery by forceps is only indicated when you are sure that the head is in a favorable position for passing through the pelvis: it may be laid down as a precept in difficult labour—*when in doubt, turn.* But the cases in which you turn because you are in doubt ought to be rare. Turning as an operation *per se* is without danger to the child. Nevertheless, many children delivered in this way are killed in the birth. It is *extraction* not turning, that is dangerous." The technic recommended does not differ to any extent from that described in American text books.

Another recent British text book—that of Berkeley and Bonney—enumerates practically the same indications for version, with the addition of any condition which necessitates hurried delivery, and the infrequent presentation of double monsters. "External version is the safest. Bipolar version is the most difficult. Internal version is the easiest but the most dangerous." Uterine infection and rupture, and asphyxiation of the child are the greatest dangers attending the operation. A preliminary vaginal douche of 1:2000 biniodide of mercury is recommended to lessen the danger of infection.

Examination of recent obstetric publications seems to indicate that version is neither extensively practiced nor authoritatively recommended anywhere in Great Britain. Culpin reports a number of cases where he has successfully employed the opera-

tion in his Australian practice, and harks back to Sir James Simpson for a confirmation of his wisdom in making use of it. Robert Jardine of Glasgow in discussing the treatment of malpresentations considers the possibility of cesarean section in occipitoposterior presentations, but prefers rotation of the head so that forceps can be satisfactorily applied. In face presentations the head should be flexed if possible and forceps applied. "Flexing the head is a very easy operation in secondary face cases, where the extension is due to the hitching of the occiput; but in primary cases, where the extension is due to a tumour in the neck, or a spastic condition of the muscles of the back of the neck, it will fail. The best treatment is version. * * * Brow presentations should be dealt with in the same way as face ones; by flexion of the head and forceps, or by version. In an anterior brow position you may increase the extension and change it into an anterior face position and then deliver with forceps, but flexion is preferable, or failing that, version."

Jardine recommends forceps for delivery in flat pelvis, except when the position is posterior parietal, and cannot be changed into an anterior one. Under such conditions "version is the proper treatment provided there is no risk of rupturing the uterus. Prior to the introduction of the axis traction forceps, version was the method of treatment in flat pelvis, but I believe that in anterior-parietal positions of the head axis traction forceps delivery gives the best chance for the child, but in posterior positions version is to be preferred. If the forceps fail in either of the positions it is a very common practice to fall back upon version; but I am very strongly opposed to this, as the chances of saving the child are very small, and the chances of rupturing the uterus are very great. When forceps have failed craniotomy is the safest for the mother."

Transverse presentations Jardine handles by Wiegand's method, if seen early; after rupture of the membranes he used "internal podalic version," dilating the os manually if necessary, for "if you wait for full dilatation, the uterus will become moulded round the child and version will become a very dangerous operation." If the child is dead and the pelvis at all contracted, he resorts to embryotomy. The use of deep anesthesia

is mentioned only once in connection with cases of impacted breech.

H. Briggs, professor of obstetrics at the University of Liverpool, writing on placenta previa, makes no mention of version in the treatment of this condition, his whole emphasis being laid upon the advantages of performing cesarean section. We may, of course, argue from this that version is so completely accepted in Great Britain as the proper method of procedure in these cases, that he considered it superfluous to mention it, but the opinions expressed by other British writers do not incline us towards such a conclusion.

In our own country we see a similar attitude toward version among recent writers in periodical literature. In the 60,000 labors tabulated by the late J. W. Markoe from his practice at the Lying-In Hospital in New York, forceps was used 2,714 times and podalic version 1,355 times, the percentage being respectively 4.46 per cent and 2.23 per cent; that is, the percentage for forceps was exactly double that for version. The literature on cesarean section is voluminous, and the indications for its performance seem to be constantly increasing, but there is practically no current literature which considers version as a separate obstetric procedure, and comparatively few references to it in general articles on the problems arising in the course of labor, and the consideration of different presentations, or obstetric emergencies.

The present trend of obstetric practice, both here and abroad, undoubtedly seems away from, rather than toward, a more general employment of version as a routine procedure, even in very difficult situations, and a very general inclination to regard it as a difficult and dangerous operation, to be classed with major interventions like cesarean section, only to be undertaken in the most desperate emergencies.

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## CHAPTER IV

## AUTHOR'S TECHNIC OF VERSION

In a survey of the history of version from remote antiquity to the present day, we have seen that the operation was for many centuries the only artificial means of completing delivery when the forces of nature had failed; but that following the invention and gradual perfection of the forceps—especially after the principle of axis-traction has been systematically worked out—the operation of version fell into disuse, and in many instances into actual disrepute. We have seen likewise that several men notably Figg in Scotland and Goodell in the United States—who advocated a more general and wider application of the maneuver—met not only opposition and ridicule, but in some cases actual vilification and the open assertion that their motives were dishonorable and their conduct unprofessional. We have observed that the present practice among leading members of the obstetrical profession, and the best hospitals devoted to maternity work, is to employ version with decreasing frequency, and to regard it at all times as a means of delivery only to be resorted to in extreme cases, fraught with danger to mother and child and difficulty and vexation to the practitioner. The advocates of "twilight sleep" are still numerous, and the partisans of the extended application of cesarean section are daily increasing, but the employment of version, especially as a means of decreasing the sufferings of the parturient woman, by shortening the second stage of labor, was unheard of until the author employed it. In fact the whole subject of version in general has received practically no attention for almost two centuries.

During an obstetric practice extending over many years in which I have personally delivered over fourteen thousand women, I early realized the value of internal podalic version as a maneuver enabling one to overcome many difficult situations, and as my knowledge of aseptic and antiseptic surgery increased, together with my ability to operate with confidence, I gradually

extended its sphere of usefulness as the years passed on. I did not do this because of the teachings of any particular text-book or because version had been advocated by any special professor of obstetrics. I first employed it when a decision was required between a high forceps case and one where turning might be reasonably accepted as a conservative and generally recognized obstetrical procedure, or in a transverse position or complicated face presentation. Instead of finding it a difficult and dangerous undertaking, I discovered it to be reasonably easy and attended with no maternal and a small fetal mortality. Gradually I ceased to follow the prescribed directions of obstetrical authorities and developed a method of my own, which will be described later with drawings and photographs so that every detail of the operation can be well understood. Very early in my practice I was satisfied that the dangers of the procedure had been greatly overstated and that its field of employment might be largely expanded, with decided advantage to mother and child. As there is no teacher like one's own experience, I compared my results each year with those of the preceding one and saw that, although I was employing version more and more frequently, there were no maternal deaths, and a lessening fetal mortality, although at no time was the fetal mortality higher than that of any other good obstetric surgeon.

The abdominal surgeon has taught us that it is a relatively safe procedure to invade the uterus and peritoneal cavity from above, from which I argued that, if similar surgical precautions were employed, it would be a very much less serious matter to invade the uterus from below. As a result, I have been able to demonstrate in papers, which I have published and wherein I reported that I had performed podalic version over four thousand times, that the procedure in competent hands should be attended with no maternal, and a very small, fetal mortality, when conducted according to the method which I have advocated. Moreover, by this method the pains of the second stage of labor are entirely eliminated, and I am satisfied that the suffering and dread of childbirth will be so much lessened that women will be willing to have larger families. Finally, as the vagina, the perineum and other soft parts are not subjected to long-continued stretching, fallen bladders, rectoceles and gaping vaginae

will be seldom seen, and postpuerperal suffering and morbidity will be reduced to a minimum.

Fig. 1.—Beginning to iron out vaginal canal with one finger.

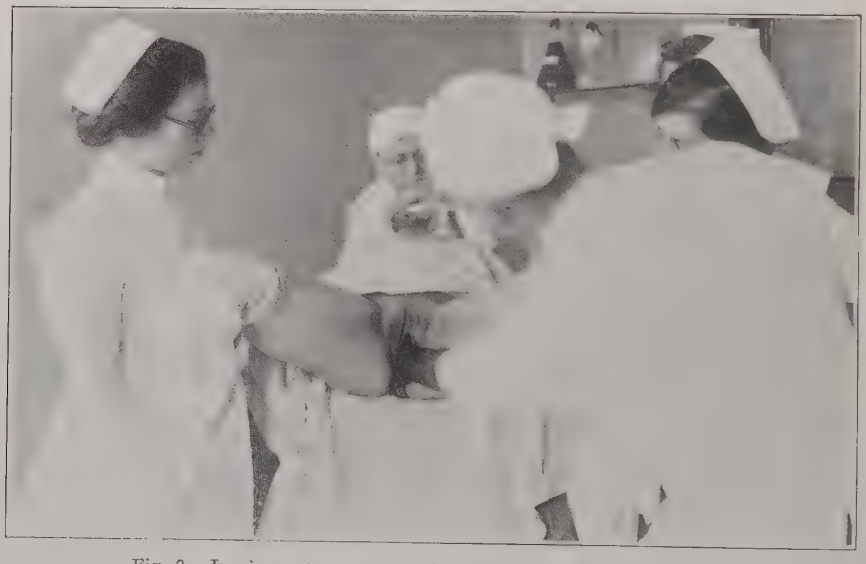

Fig. 2.—Ironing out process continued with two and three fingers.

To safeguard maternity by reducing the mortality due to pregnancy, labor, and puerperal complications is most desirable,

and any procedure tending in this direction commends itself without question. According to *American Medicine* of July,

Fig. 3.—Finally the whole hand introduced into the vagina, the palm of the hand being up.

Fig. 4.—Operator's hand and arm introduced into vagina. Note towel around operator's arm to protect him from escaping fluid.

1917, a bulletin issued by the Children's Bureau of the Department of Labor shows that more women between the ages of fif-

teen and forty-five years die of puerperal causes than of any other diseases except tuberculosis. About 15,000 maternal deaths, the result of pregnancy and labor, occur annually in the United States, and these figures have shown no decrease since 1900.

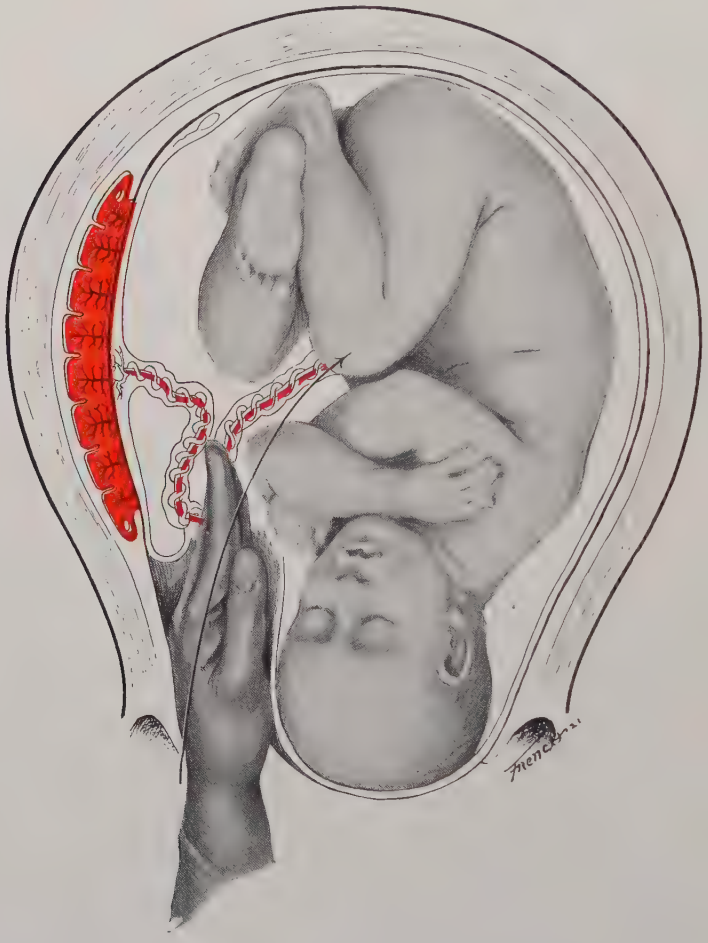

Fig. 5.—Separating the membranes from the uterine wall before rupturing them, carefully avoiding loosening the placenta so as to lessen the amount of bleeding.

In describing this method of version I can do no better than to insert the description embodied in the paper which I read by invitation at a meeting of the Philadelphia Obstetrical Society, November 4, 1920.

The patient is prepared as for a major operation, shaved,

scrubbed and made as clean as possible and the bowels should have been cleaned out with castor oil or an injection some hours before, so as not to soil the field during the delivery. The operator's hands are washed and sterilized with the greatest care. He is then gowned with short sleeves and long rubber gloves reaching to the elbows.

The woman is placed upon the table and anesthetized to the

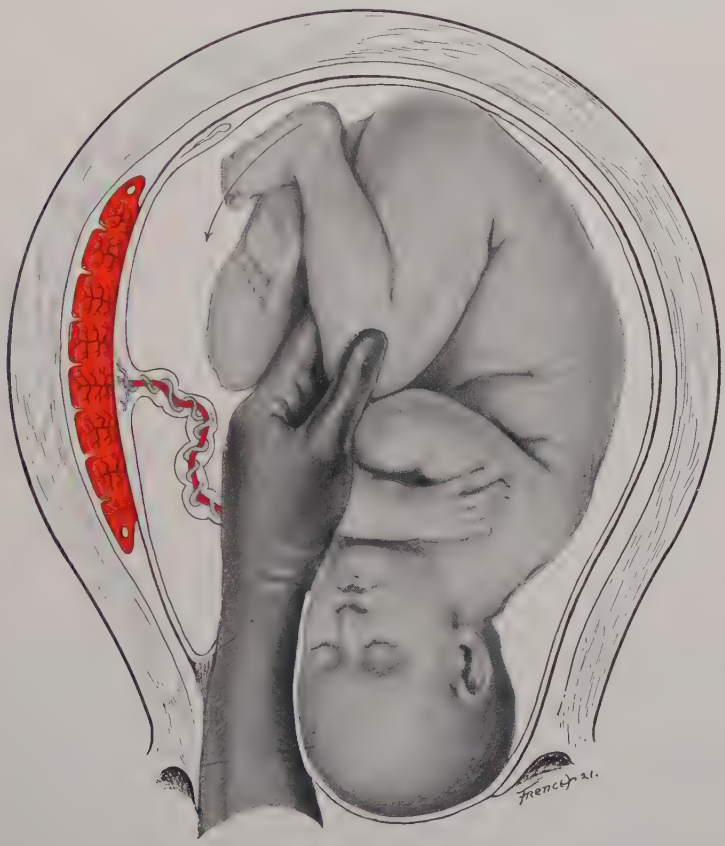

Fig. 6.—Bringing anterior foot down by traction on knee until the foot can be reached. Note position of child's arms folded across the chest.

stage of surgical anesthesia, so that there is no resistance to the various procedures to be carried out. She is then placed in a modified Walcher position, one leg held by an assistant standing on each side, or if no assistants are available, the legs are supported on two chairs while the operator stands between them (Figs. 31 and 32).

The bladder is emptied of all its urine, and this is very important, as many patients void and still retain a half pint and more of urine in the bladder.

The vagina and soft parts are now dilated (Fig. 1) by first putting in one finger of the gloved hand well lubricated with green soap, and passing it up as high as the cervix and then with-

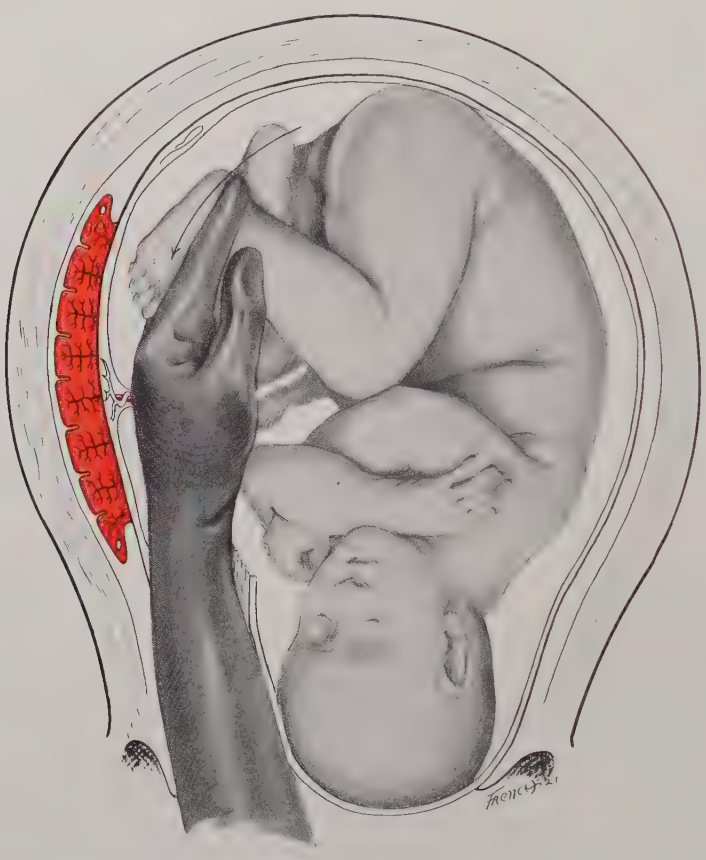

Fig. 7.—Unlocking feet at fundus before attempting the version.

drawing it with a steady, continuous and firm pressure (Figs. 2, 3, 4). Then two fingers are inserted and then three fingers, and finally the closed fist until all the rugae and folds of the vagina are thoroughly ironed out. It matters not whether the case be a primipara or a multipara, the procedure can be just as satisfactorily and completely done.

Now the cervix, which must always be obliterated or soft

and easily dilatable before version is ever attempted, is gently stretched with the fingers. Then the outstretched hand and the arm is pushed high up between the uterine wall and the membranes, and the latter are gently separated all over by sweeping the fingers of the hand up and down and around, being careful not to work too near the placenta (Fig. 5).

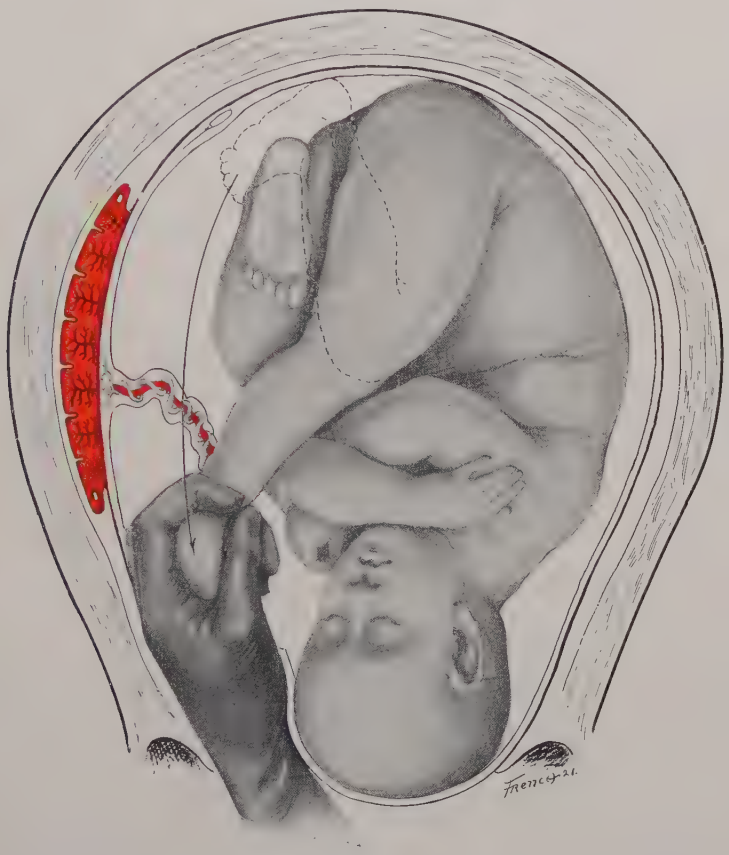

Fig. 8.—Bringing down anterior foot after unlocking feet at the fundus.

Next a towel is rolled around the wrist to catch any of the amniotic fluid which might gush out when the membranes are ruptured high up (Fig. 4). The hand is now free in the uterine cavity, the position of the child is made out and its probable size estimated, the position of the cord ascertained and the diameters of the pelvis approximated (Figs. 6, 7 and 8).

Both feet are now grasped between the first and middle

fingers of the left hand—the left hand is always used for the version no matter what position the child is in (Figs. 9 and 10). According to the position of the child, the toes of the feet will either look to the palm of the hand of the operator or away from it. If the feet are locked at the fundus, gently unlock them and seize one foot bringing it down as shown in Fig. 8; then reach

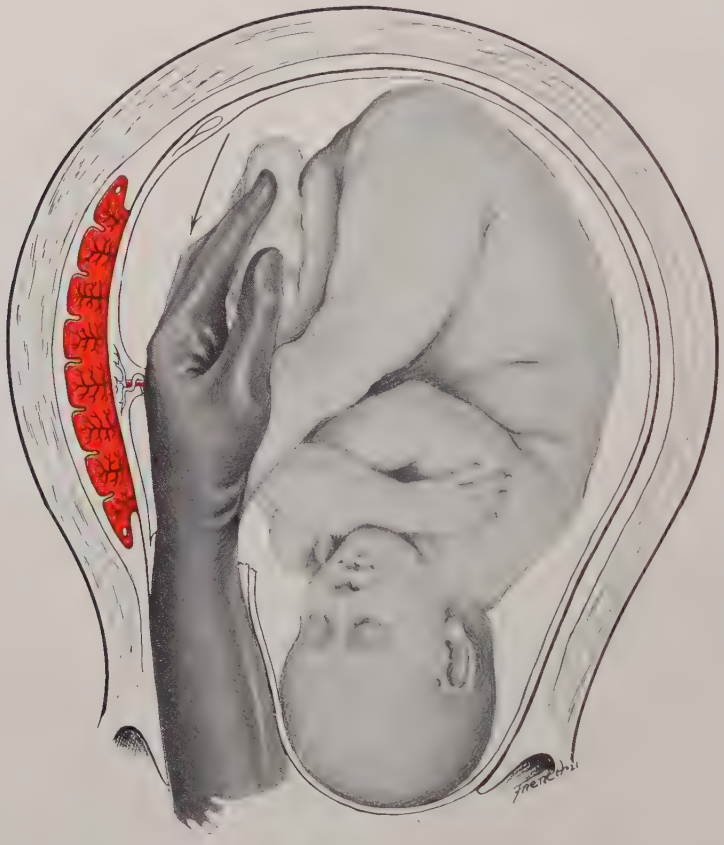

Fig. 9.—Second foot being brought down. Do not unfold the arms.

up for the second foot as shown in Fig. 9, grasping both feet between the fingers as shown in Fig. 10. Fig. 6 illustrates the method of bringing down the anterior foot by gentle traction on the knee until the foot can be reached.

Now the extraction begins and both feet are brought down to the vulva and delivered together, the child's body having rotated with this onward movement (Figs. 11 and 12).

Slight pressure is sometimes necessary at this stage to lift the head out of either iliac fossa with the right hand. Continued gentle traction is made until the knees are exposed, at which time the version is complete (Figs. 13 and 14). Now rest for a

Fig. 10.—Both feet being brought down. Note manner of grasping both feet, also the direction of the arrow. Note manner of first lifting the head out of the pelvis with the left hand then pushing forward with the same hand to reach the feet. If necessary continue the upward pressure on the child's head by using the operator's right hand on the outside of the mother's abdomen. The child's arms still remain folded.

few moments and then gently pull upon the anterior foot and lower leg until the pelvis of the child comes into view, when it will be seen that the pelvis is rotated in the opposite direction and is eventually delivered in that direction (Fig. 15). This rotation is brought about by the traction on the lower leg and the

Fig. 11.—Both feet brought down to outside world. Note method of grasping feet by operator.

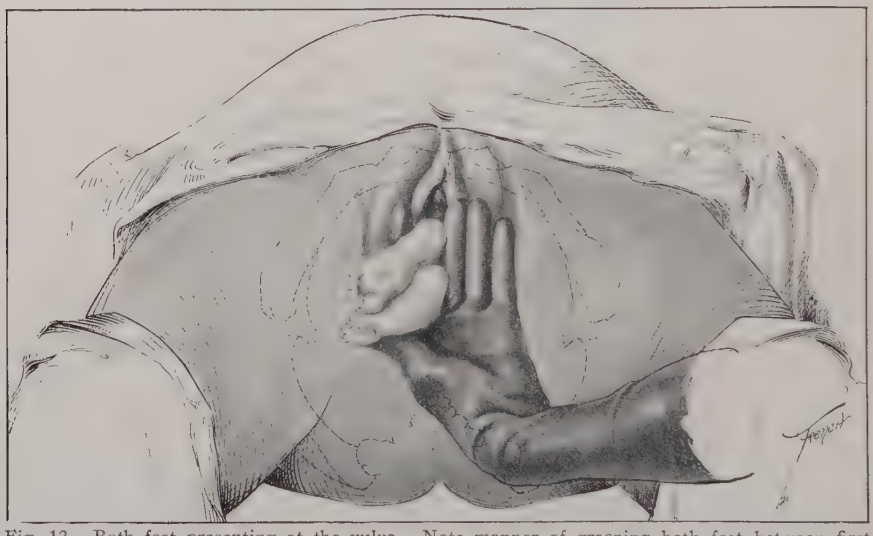

Fig. 12.—Both feet presenting at the vulva. Note manner of grasping both feet between first and middle fingers of left hand.

baby comes into the world with its back transverse to the pelvic outlet (Figs. 16, 17, 18, and 19). No attention is paid to the cord at this time if it is free and loose, which it usually is, but if it is tight and short a clamp is placed at the umbilicus and the cord is cut, if it cannot be otherwise loosened.

Fig. 13.—Version completed. Knees of child exposed.

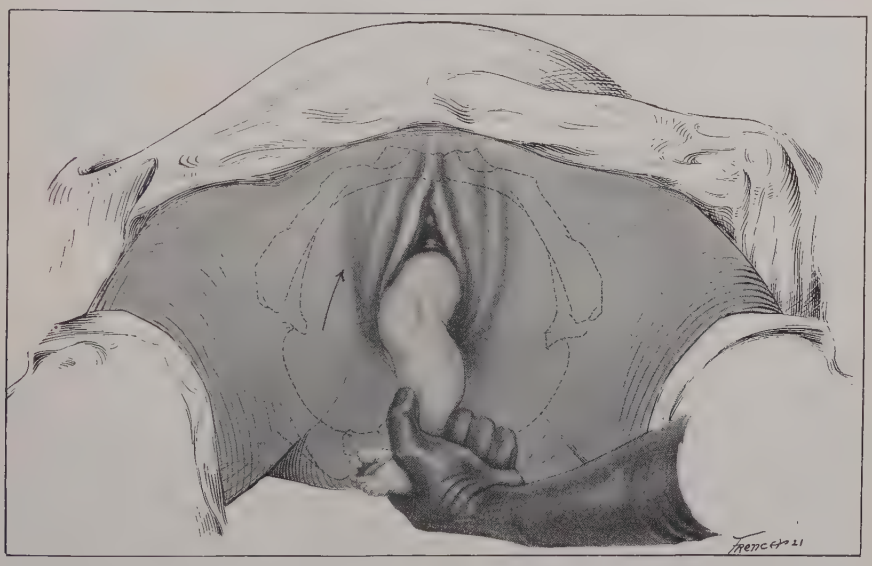

Fig. 14.—Knees of child exposed at vulva, showing version is completed.

We now proceed with the delivery of the scapulae which must be always thoroughly exposed and well out in view before any attempt is made to deliver the shoulder (Figs. 20 and 21). Then the fingers and the hand of the operator are pushed well above the shoulder between the lips of the vulva and the anterior

shoulder is delivered with the upper arm (Figs. 22 and 23). The operator now grasps the baby with his hand over the exposed shoulder and chest and rotates the child's body so that the posterior arm comes anterior and is delivered as such (Figs. 24 and 25). Both shoulders being now delivered, the lower arms usually fall out of themselves. If, however, they remain undelivered they can be gently lifted up across the chest of the child and drawn away from the perineum under the pubic arch. (You will observe that the baby in this rotation movement is not twisted from the legs as I have seen it done.) The older method

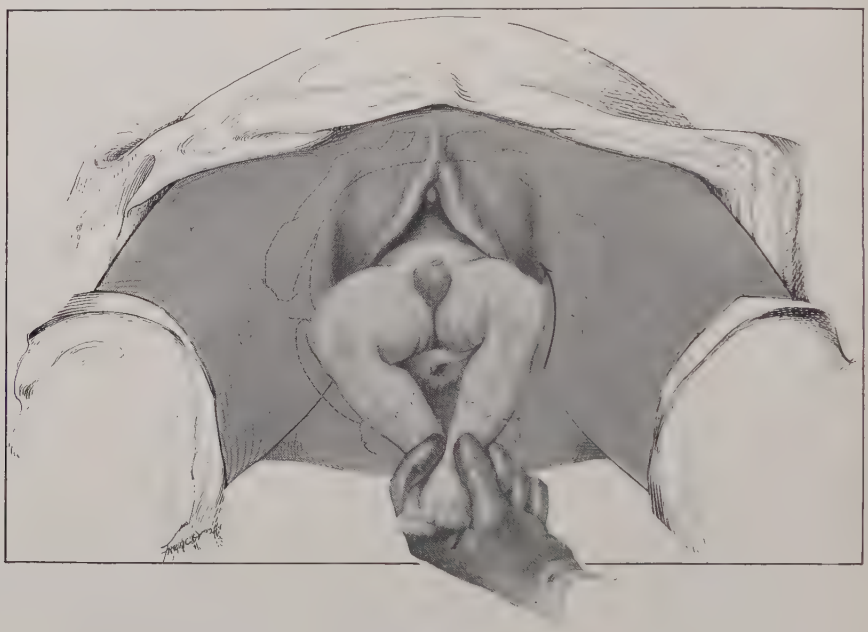

Fig. 15.—Buttocks delivered in the hollow of the sacrum.

of version brought the arm down as a posterior arm across the distended perineum, which was often the cause of the extensive tears consequent upon that method of podalic extraction.

The operator now determines whether there is any loop of the cord around the neck and finding none he proceeds with the delivery, but if the cord be twisted once or twice or even three times around the neck this condition of the cord must, if possible, be relieved by loosening it, and if absolutely necessary, it must

Fig. 16.—Buttocks of child being delivered by expulsive efforts of mother.

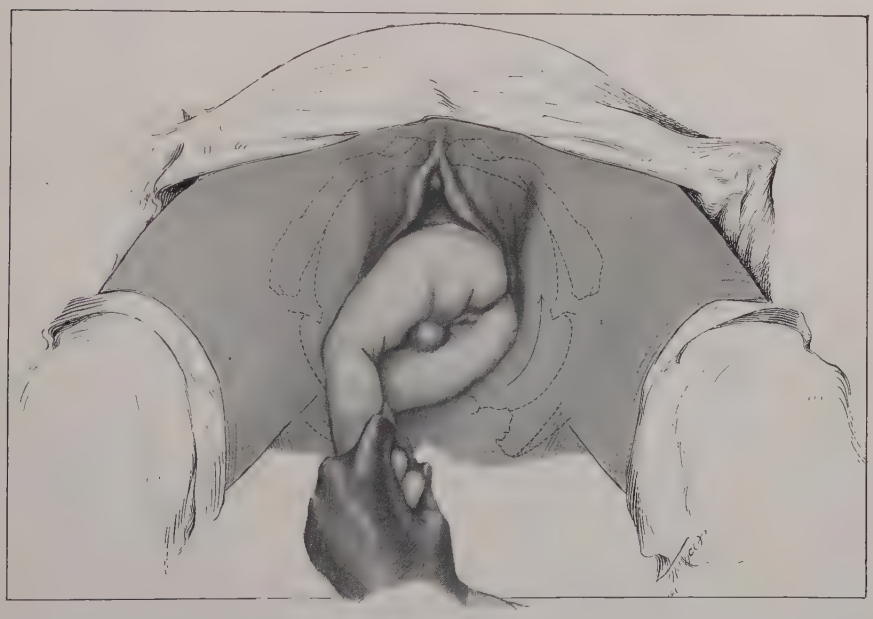

Fig. 17.—Buttocks rotating anteriorly aided if necessary by gentle traction on anterior leg.

be cut and clamped. However, usually the cord is free and no haste is necessary.

The fingers of the left hand are now inserted into the baby's

Fig. 18.—Back of child rotated squarely across outlet.

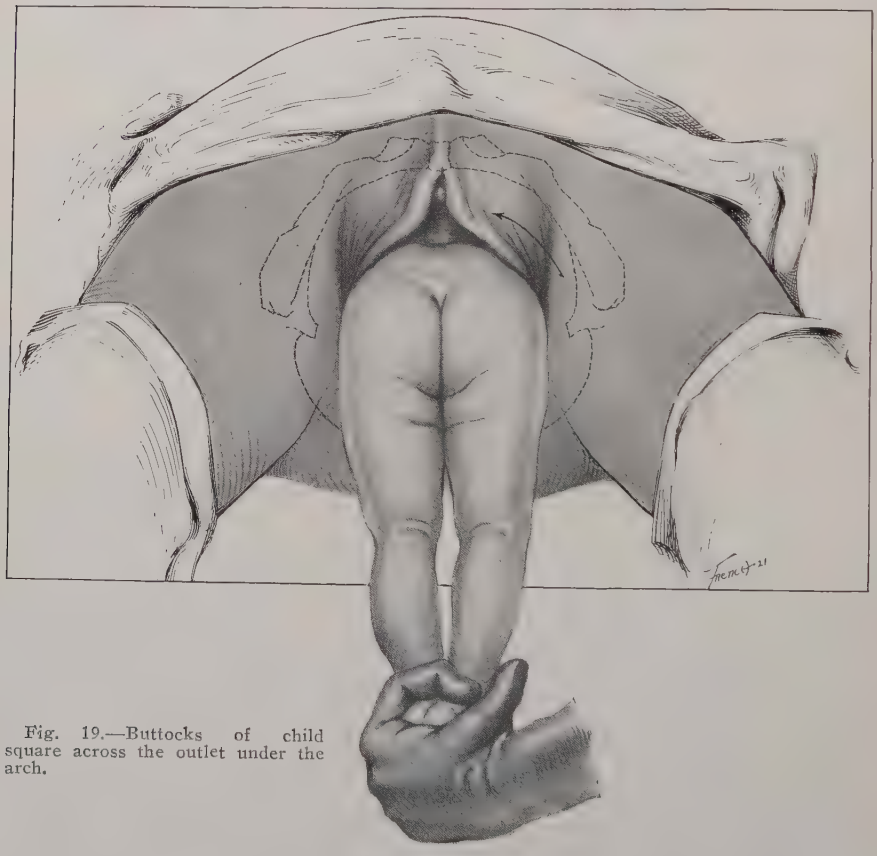

Fig. 19.—Buttocks of child square across the outlet under the arch.

Fig. 20.—Anterior shoulder delivered under pubic arch.

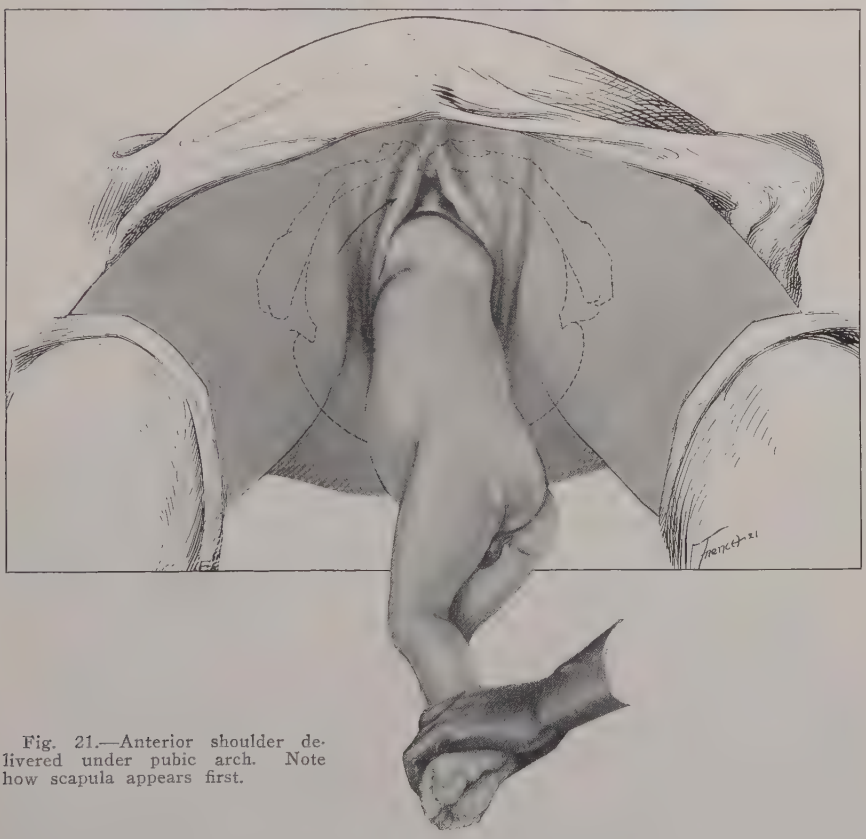

Fig. 21.—Anterior shoulder delivered under pubic arch. Note how scapula appears first.

Fig. 22.—Note method of grasping anterior shoulder before rotating posterior shoulder under the pubic arch.

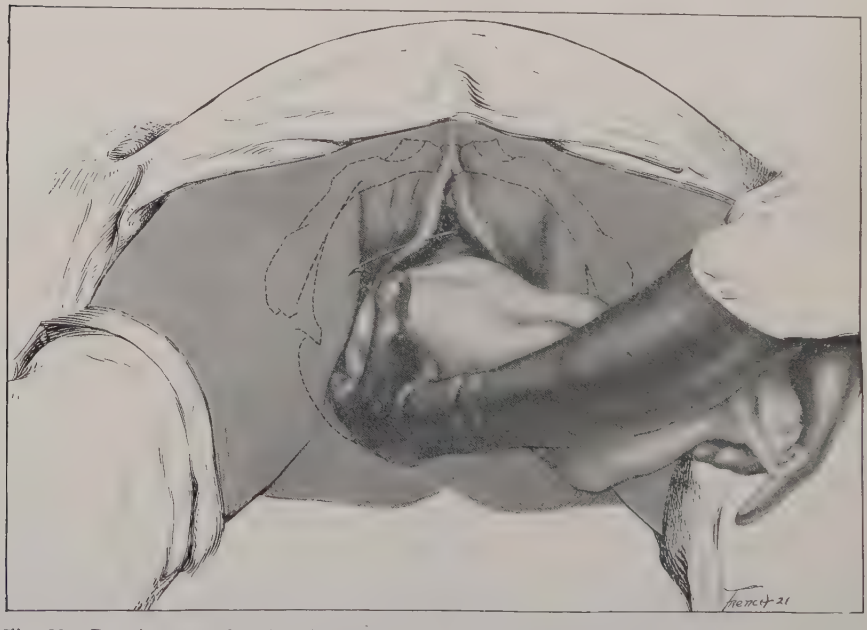

Fig. 23.—Rotating posterior shoulder under the arch so as to deliver it as an anterior shoulder, thus avoiding perineal lacerations.

Fig. 24.—Posterior shoulder rotated under pubic arch. Note support of body of child by operator's hand.

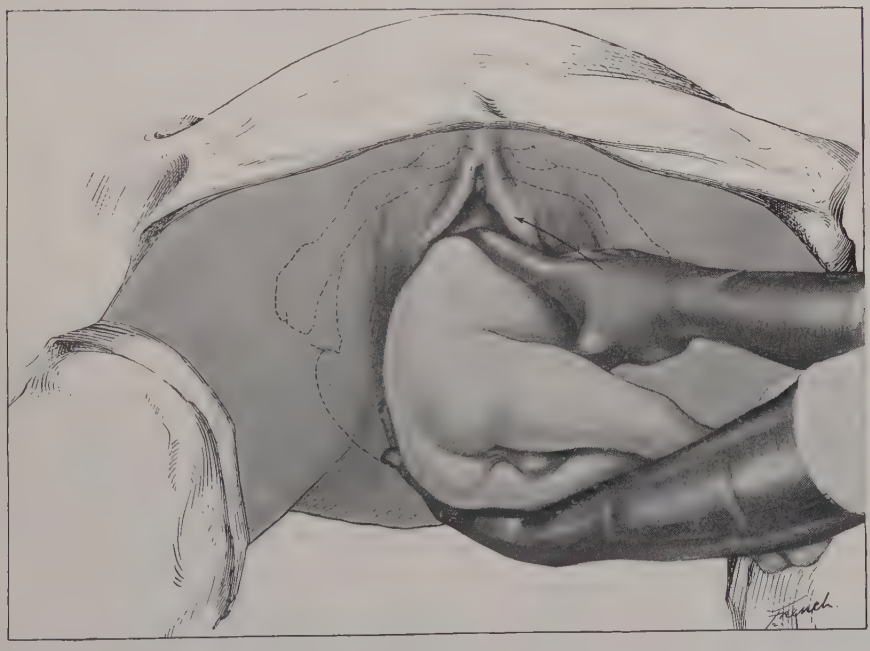

Fig. 25.—Pushing scapula under pubic arch with index finger instead of pulling shoulder down as formerly advocated, showing improvement of technic over that used and described in my first paper.

mouth (Figs. 26 and 27) and with the right hand gentle pressure is made upon the occiput over the pubes to aid in the flexion of the baby's head and also to direct its passage through the pelvic canal. The jaw is not pulled upon, as a fracture might result.

Up to this point no pressure from the outside has been made in the delivery because such pressure over the head before delivery of the arms has a tendency to push the head down, which allows the arms to go up as well as extend the chin, complications which at all times must be avoided, and I am sure it

Fig. 26.—Delivery of after-coming head. Child may be allowed to breathe in this position.

is this pressure that makes the difficulties and dangers of other methods of version.

By this time the baby's mouth is exposed and the mucus is milked out of the throat by the fingers gently stripping the front of the neck, when the baby will begin to breathe and often cry aloud.

The head can be left in this position long enough to thoroughly dilate the perineum and vaginal structures (Fig. 27) as no haste is indicated and finally the nose is delivered, followed by the brow in an extremely flexed condition which is further assisted by lifting the body well forward and up from the perineum (Fig. 28).

The baby is now placed upon its right side on its mother's abdomen and allowed to remain there until the cord ceases to pulsate (Fig. 29). The ligature is now placed around the cord

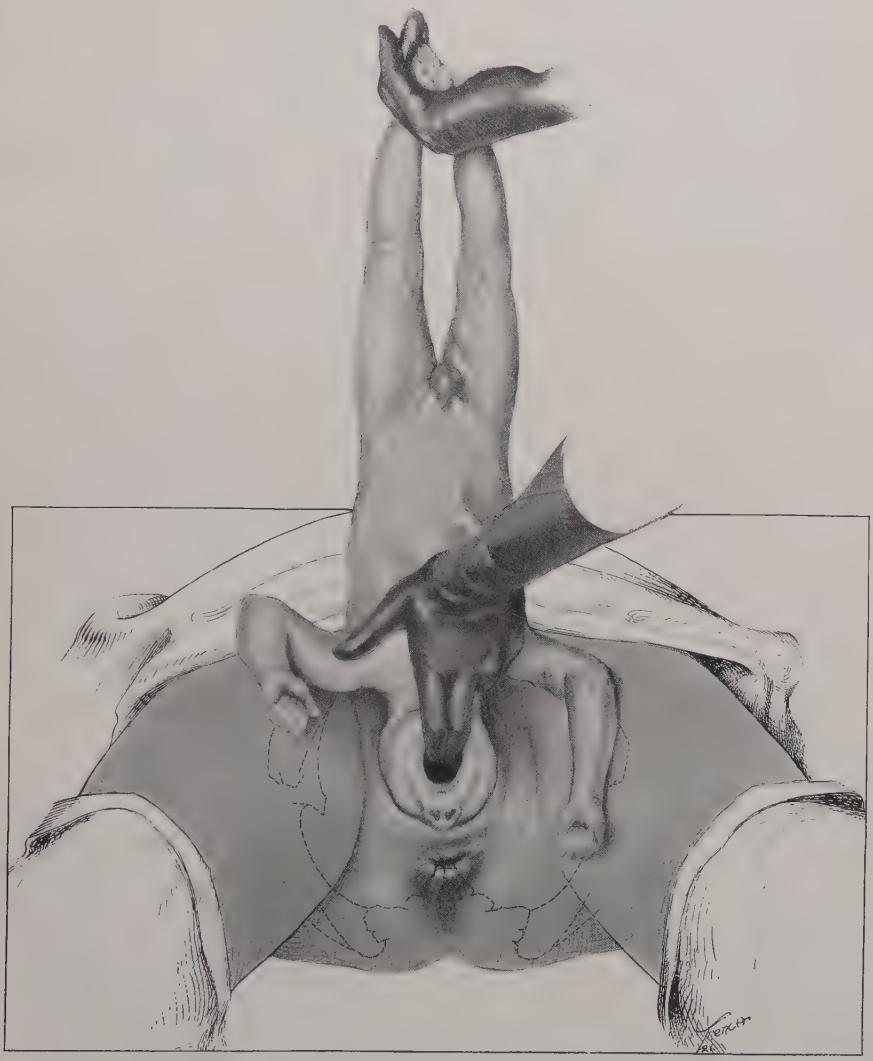

Fig. 27.—Delivery of after-coming head. Exaggerated position of child for purposes of demonstration only, because if overextended a broken neck might occur.

and the cord is cut and a hypodermic of pituitrin 1 c.c. is given deep into the muscles of the mother. The third stage of labor can now be completed immediately if any indication exists, or

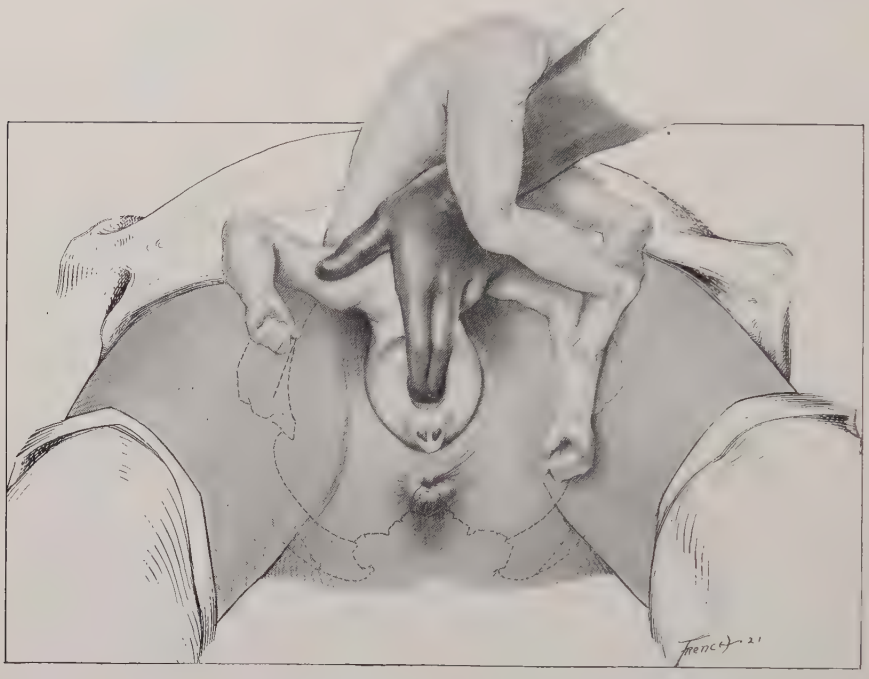

Fig. 28.—Delivery of after-coming head. Proper position of child across operator's arm.

Fig. 29.—Delivery completed. Child placed upon mother's abdomen, resting upon its right side.

the placenta can be left from fifteen to twenty minutes and often it is expelled spontaneously. If not, the gloved hand can be introduced and it can be extracted manually. The patient is now put to bed and usually with a binder.

1. The cervix must be obliterated and the os dilated or dilatable, before version is attempted. This condition is easily determined by careful examination. The cervix need not always be entirely obliterated if it is soft and easily yields to the advancing hand.

2. The position of the presenting head is of no particular

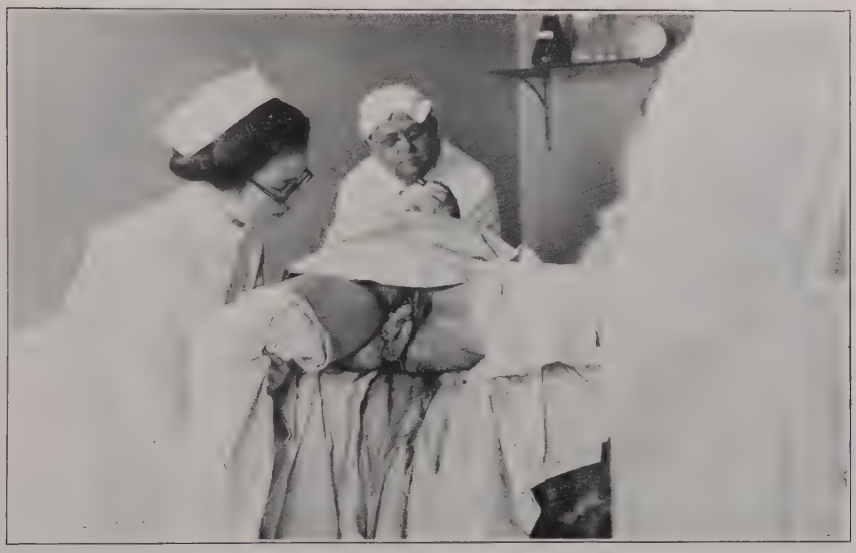

Fig. 30.—Both feet at vulva with cord prolapsed, a condition often seen with version.

importance. A version can always be successfully performed if the presenting head can be lifted above the brim of the pelvis. Sometimes the head is so wedged in the pelvis, when the waters have drained away, that version is impossible. When this condition exists, delivery by forceps or other means is necessary.

3. Both feet are brought down because the delivery is easiest when this is done; and, if necessary, in the interest of both mother and child, the labor can be terminated more quickly. By pulling on both feet the obstetrician distributes traction more evenly and thus secures a better dilating wedge.

Both feet, instead of one foot, should be brought down at the same time.

No attempt to deliver the arms should be made until the scapulae are outside the vulva. The anterior arm should always be delivered first.

4. The anterior arm is delivered first because by so doing we relieve the stretching and tension of the soft parts of the mother, and permit rotation of the child's body so that the posterior arm now becomes anterior.

5. I never hasten delivery after the umbilicus comes into

Fig. 31.—Proper position of patient when assistants are available.

view because experience has taught me that haste is unnecessary; that severe complications such as extension of the arms and of the head are very apt to take place when we interfere with the natural forcing powers at this particular stage of delivery.

6. Extension of the head is overcome by aiding flexion of the head with the fingers of one hand in the child's mouth, and with the other hand making gentle pressure upon the head over the pubes.

7. The perineum and soft parts of the mother are saved, first of all, by deep anesthesia; secondly, by having the patient

in the partial Walcher position, which gives one good control and admits of slow and safe delivery of the head after the vagina and perineum have been previously ironed out and properly dilated.

8. I am apparently indifferent to the child's breathing immediately after birth. Experience has taught me that nearly all of the babies begin to breathe spontaneously when let alone, provided the heart is beating. Occasionally, when respiration

Fig. 32.—Position of patient when no assistants are at hand.

is unusually delayed, a catheter is passed into the trachea. Rough handling of the baby after it is born is never tolerated.

9. During the delivery, as soon as the mouth is exposed over the perineum, the baby's body is raised up to let the mucus run out of the mouth. Blue babies give me no anxiety but white babies do.

10. The operator must remember that in the delivery of the head extreme flexion is necessary and that this flexion can be best produced by placing the fingers of one hand in the child's

mouth and by making gentle pressure upon the head over the pubes with the other. If extension of the head takes place notwithstanding every care, complications at once arise, but in the hands of an experienced operator extension of the head does not occur or at all events is very infrequent.

11. When the chin and mouth have been delivered the mucus will run from the child's mouth and nostrils or it may be milked out by gently stroking the neck and thus many children will breathe before delivery of the head is complete. Therefore haste is unnecessary.

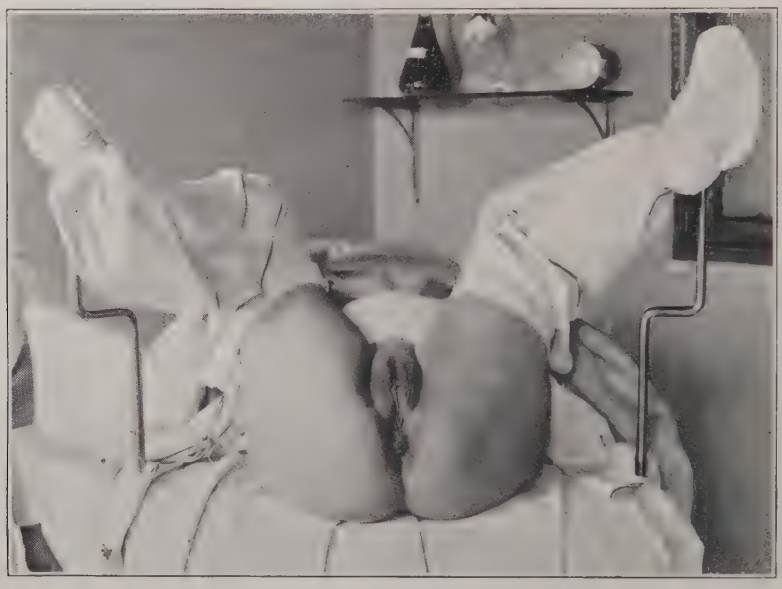

Fig. 33.—Improper position of patient for version.

12. Too great pressure upon the mother's abdomen during delivery of the head should be avoided for fear of injuring the bladder or lower anterior uterine wall.

13. The after-coming head may be delivered by forceps if necessary.

14. The operator should at all times have a perfect knowledge of the position of the child *in utero* before version is attempted, and an exact knowledge of this can be obtained only by introducing the hand to the fundus and exploring the uterus and the fetal parts carefully.

Men have criticized me for saying that I find posterior occipital positions in from 60 per cent to 70 per cent of my cases. It is because I examine these women many hours earlier and before rotation has taken place.

15. If the membranes have not been ruptured, it is well to separate them all around and as high up as possible from the uterine wall before rupturing them. The rupture should

Fig. 34.—Hand and arm properly prepared for version.

Fig. 35.—Hand and arm improperly prepared for version.

be made high up for the purpose of retaining as much of the amniotic fluid as possible.

16. When the knees of the child appear at the vulva, the version is complete.

17. The operator should be master of the situation at all times and with the child's chest resting on his hand he can watch the fetal heart as he can feel its pulsation in his hand. I have never broken an extremity in a living baby during version. On three occasions the humerus was broken in delivering

dead babies and when haste was necessary in the interest of the mother. (Since this paper was published I broke the left humerus of a baby in a primipara in whom the arm became extended.)

18. The extreme lithotomy is not the best position for the patient when a version is performed. The modified Walcher position admits of better results by relaxing the soft parts of the mother. This position can be obtained only by having the assistance of two attendants who hold the legs one on each side or by allowing the feet of the patient to rest upon two chairs if assistants are not at hand.

19. When the child is born, it is placed on its right side across the abdomen of the mother. This position aids perhaps in the closure of the foramen ovale. The child remains upon the abdomen until the cord is tied and cut. At this point I should like to enter a protest against the too common practice of spanking or beating the baby to make it breathe, as this is unnecessary and may do harm. I rarely have to do anything except hold the baby up with its head down to allow the mucus to run out of the mouth or blow a few times upon the child's chest to establish respiration quickly. Sometimes we breathe into the child's trachea through a small catheter but not very often. In my early practice I did this more frequently but now I know that haste and anxiety in inducing the child to breathe are seldom necessary.

20. The third stage of labor may be completed by delivering the placenta manually. It is my practice, however, to administer by deep hypodermic injection into the muscles of the mother, 1 c.c. of pituitrin immediately after the birth of the child and in a very short time the placenta is expelled with very little hemorrhage.

During the past year I have been practicing some further manipulations, which I consider to offer a great advantage in the delivery of the shoulder, because an accident might result in the too rapid delivery of the arms. Instead of making pressure over the shoulder downward, as I wrote in my Philadelphia paper, I now, in my present practice, place the first finger of the left hand in the axilla and rotate the scapula under the pubic arch and by means of that pressure I allow the shoulder and

arm to deliver themselves; I then insert my finger in the bend of the elbow, lift the forearm up over the chest and deliver it in that manner without any traction; then complete the delivery of the other shoulder in the manner previously described.

Sometimes difficulty arises in the delivery of the after-coming head, but this very seldom happens, as I used the short for-

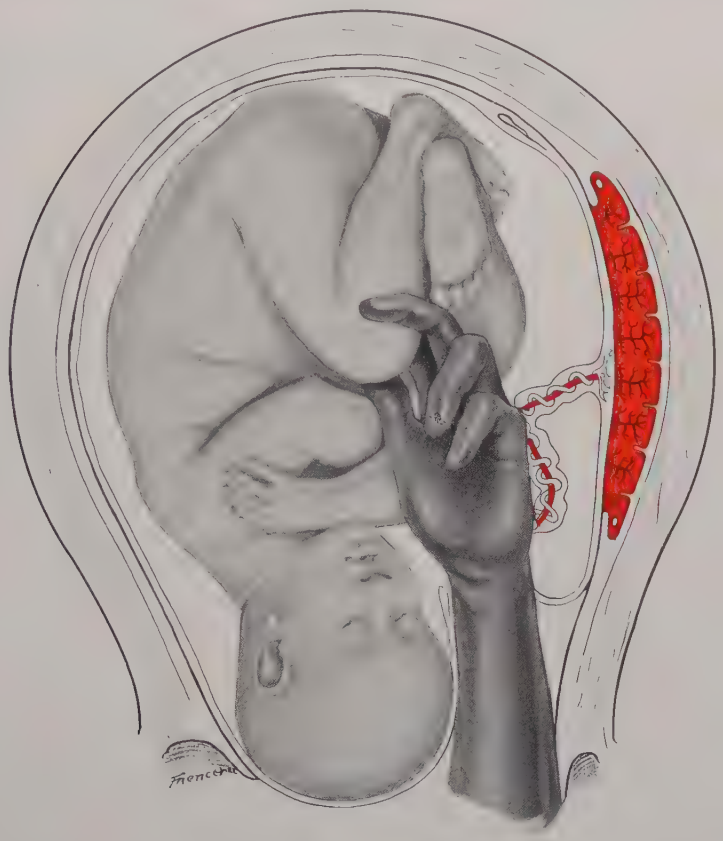

Fig. 36.—Anterior foot being brought down in R.O.P. position. Operator using left hand.

ceps only twice in my last 938 cases. I look upon forceps compression, when great and if long continued, as a serious menace to the immediate, as well as the future well-being of the child. Pressure from the outside must never be made upon the mother's abdomen except when you are commencing the version, and then again, after the arms and shoulders have been delivered, to complete the delivery of the head. I am satisfied

that pressure on the uterus, as recommended by other authorities, is one of the principal causes for having the arms come up over the head of the child. Sometimes the head gets locked in its delivery and then too much backward movement of the child upon the mother's abdomen should be guarded against. I have heard of two cases, where the baby's neck was broken by this undue overflexion. The delivery of the baby should not be too rapid as there is no necessity of haste; and the child's back should be supported in the hand as shown in Fig. 28. Recently, in a primipara thirty-seven years of age, I allowed the head to rest on the perineum fourteen and one-half minutes, with the mouth exposed, before completing the delivery of a live baby weighing 7 lbs. This was done to allow still further dilatation of the vaginal canal.

## FAULTY PRESENTATIONS WHEN VERSION IS APPLICABLE, INCLUDING TWIN PREGNANCIES

In none of my papers or discussions have I ever attempted to give the indications for internal podalic version based upon pelvic measurements; nor have I ever accepted in my own work the conclusions of the various teachers of obstetrics as to the method of delivery, which should be practiced in these special classes of pelvic abnormalities.

I recognize the pelvimeter as an instrument of some value, but in my own work have depended more upon my personal experience, considering the history of the patient, the findings of the vaginal examination, the general build of the indivdual, and—most valuable of all—the knowledge gained by my own hand in the uterus, as worth more than that obtained by the use of any machine calculations of inside or outside pelvic measurements. I never made a high forceps delivery nor believe it justifiable when brought in comparison with version; therefore, I would not accept a certain number of cubic centimeters, as the indication or limit for the employment of either procedure. However, even in difficult and abnormal presentations, where the cervix is soft and dilatable, or in a reasonably normal pelvis with a not much oversized baby, I contend that nearly all of these women can be safely delivered with a living child, if my

method of extraction is employed early enough. The uterus must not be too firmly contracted and the fetus not too firmly wedged in the pelvis, but even when the waters have drained away days before, if the uterus will relax under deep anesthesia, a version can be safely performed, notwithstanding

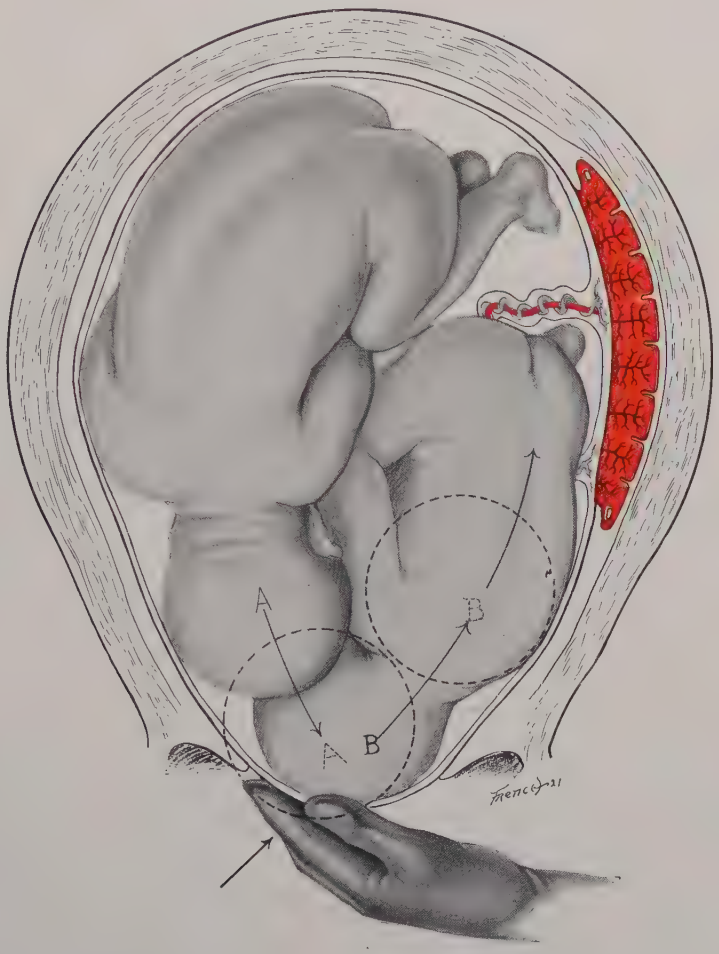


Fig. 37.—Lifting first twin *B* up so as to allow second twin *A* to be delivered first.

the absence of any liquor amnii. I make this broad statement after performing over four thousand versions.

However, the object of this book is not to enter into a polemical discussion of version in opposition to other obstetrical procedures, but only to present to the student and practitioner

a new method which I consider the very best practiced up to the present time.

In doing version in a twin pregnancy where both heads present, my procedure is as follows: Cervix being fully dilated, carefully introduce the left hand, well lubricated with green soap, into the uterus, exploring the uterine cavity to locate the exact position of each fetus, care being taken not to rupture the

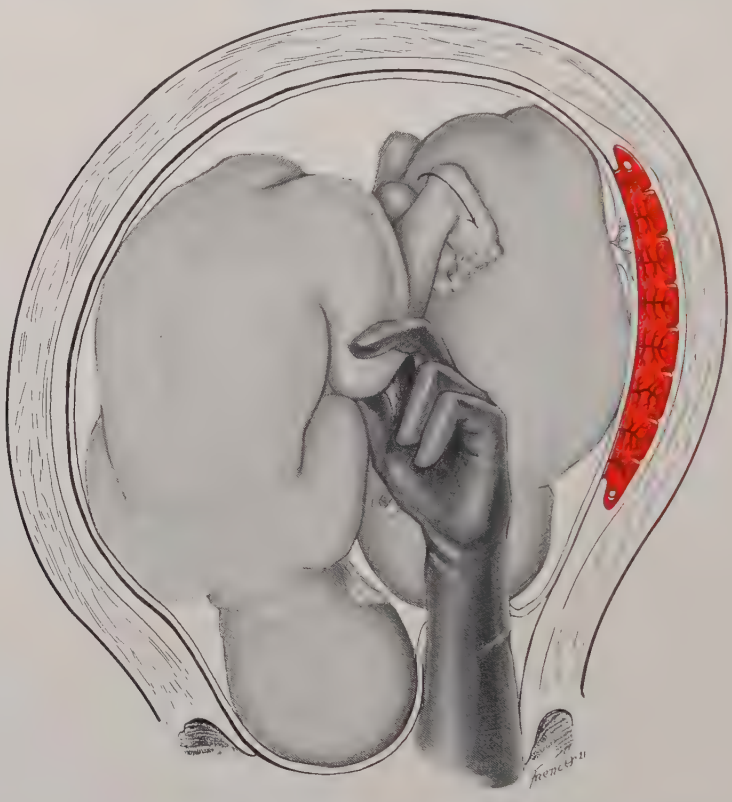

Fig. 38.—Feet of second twin being brought down after pushing first twin upwards out of the way.

membranes. After mapping out the position of each child, carefully raise the head of the *presenting* child (marked B in Fig. 37) so as to allow the second child to fall into the place occupied by the first one, at the same time gently pushing the hand onward until both feet of the second child are grasped and brought down, the delivery being accomplished in the usual manner (as shown Fig. 39). The child first presenting is then

delivered by version. This procedure avoids the possibility of locking the twins, an accident that once happened to me and necessitated the decapitation of the first child.

**Twin Cases Presenting One Head and One Breech.**—It is best to deliver the presenting head first and the second child

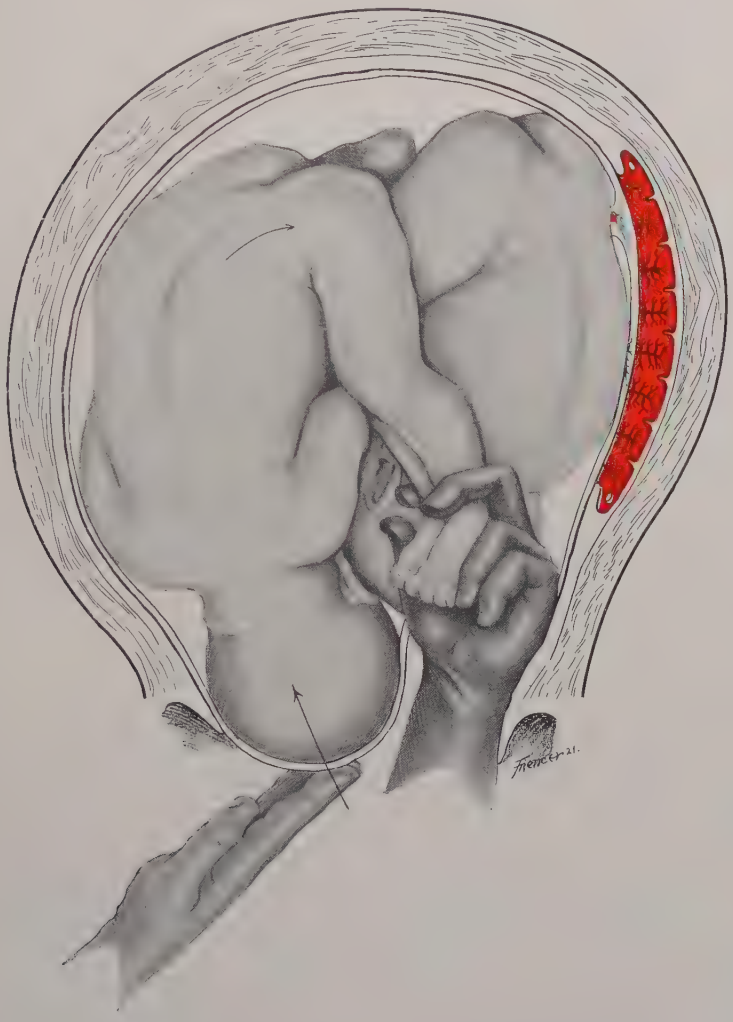

Fig. 39.—Feet of second twin being brought down, at the same time pushing head gently upwards with right hand on outside to aid version.

as a footling; thus again avoiding the locking of the twins; in other words do not turn either child.

Cases of neglected shoulder presentation leading to a pro-

lapsed arm are not seen in elective versions. These are the neglected cases seen in consultation. Oftentimes a hand and forearm are found protruding from the vagina, the child being dead and the uterus firmly contracted around it and the amniotic fluid all drained away. Under these conditions embryotomy is indicated. *Where the child is living,* a loop of bandage can be placed around the wrist, if this protrudes from the vulva, so as to control the direction of that arm; while at the same time,

Fig. 40.—Uterus firmly contracted around child, amniotic fluid having drained away making version impossible.

under deep anesthesia, both feet can be brought down and delivery of the child completed as a footling. I never put a loop of bandage around an extremity unless it is exposed.

In cases of prolapsed cord, whether in multipara or primipara, with a cord still pulsating and cervix undilated or undilatable, abdominal cesarean section is the operation of choice, provided the patient is at term; before the seventh month, a vaginal cesarean section is permissible.

In case of a dead child, no harm can follow waiting for the

cervix to soften and dilate, provided the mother remains in good condition. In central placenta previa, abdominal cesarean section should be performed at the earliest possible moment in the interests of both mother and child. Only in the marginal and lateral types of this condition should version be considered, and not then if the cervix is not dilated or easily dilatable. Following delivery in these cases it is my custom to pack the uterine cavity firmly with iodoform gauze 10 per cent, removing it in twenty-four or thirty-six hours (if it is not expelled before that time), thereby avoiding a still greater and sometimes extremely dangerous loss of blood.

I am able to report two living children delivered by version after my method, where I delivered the placenta first in each case; in both as the placenta was in the way it was simply peeled off the uterus and the delivery completed by version, both mothers and children surviving.

## CHAPTER V

## CRITICISMS AND ANSWERS

Five years have now elapsed since I made the first formal presentation of my method of podalic version before the American Association of Obstetricians and Gynecologists. At that time my procedure was universally condemned, and this opposition has been in a large measure maintained until the present time. The chief objections first raised against my technic were: (1) The danger of introducing the hand into the uterine cavity; (2) the certainty of serious injury to the mother's soft parts; (3) the danger of sacrificing the child when for any reason there was delay in delivering the after-coming head; and (4) the imprudence of bringing down both feet instead of one. Of late the chief objection seems to be that although one man may be able to obtain satisfactory results by the use of this method it requires so long a technical training and so wide a practical experience, as to be inexpedient for general use in obstetric work and likely to be attended with great mortality if undertaken by any except the highly trained specialist.

Taking up the objections in order, let us first consider the dangers of invasion of the uterine cavity. Version, as we have seen, has usually been regarded as an emergency measure: it was ordinarily employed only as a last resort when all other procedures had failed, and was often—one may be justified in saying, usually—done under adverse conditions and in unsurgical surroundings. Consequently, infection was a common occurrence, and the danger of it came to be regarded as a great drawback to the employment of the operation.

In my practice preparation is made as for any other major surgical intervention. Delivery takes place in a hospital, if possible; if not, the surroundings are rendered as aseptic as the conditions permit. The patient is prepared as carefully as for any gynecologic procedure; and the operator takes the same precautions as he would before doing a vaginal section or a

laparotomy. Above all, the genital canal is not infected by repeated examinations and explorations as is usually the case when version is performed as an emergency measure. Under the strictest asepsis, a single examination is made to ascertain the amount of dilatation, the hand being introduced to the fundus for a careful exploration of the state of the uterus and the situation of the fetal parts. Thus, when version is begun the hand which enters the uterus, has but small chance of carrying infection with it.

The objection will, of course, immediately be raised that if this method of delivery should become a routine in everyday practice it would constantly be done under conditions favoring sepsis, and the resulting mortality would be appalling. There have been cases where a licensed practitioner used the same knife to pare a corn and remove an appendix, without any intervening sterilization of the instrument and the resulting mortality was appalling, but nevertheless appendectomy is universally recognized as a legitimate operation when performed under proper conditions.

The second danger attending the introduction of the hand is the likelihood of rupture of the uterus. *No case of uterine rupture has ever occurred in my practice.* Version is never attempted until the cervix is fully dilated or dilatable. The patient is anesthetized to the surgical degree before the hand enters the uterus, complete relaxation of that organ being in this way obtained. As I have emphasized elsewhere, competent administration of the anesthetic is an absolute necessity. The idea that "any fool" can spill chloroform on a mask efficiently enough to secure the proper degree of anesthesia for an artificial delivery, should be once and forever banished from the mind of the man who intends to do a successful version. The technic described in the preceding chapter can be readily carried out single-handed, but the anesthetic must be handled by someone who knows his business, otherwise it is useless to attempt the maneuver.

Rupture of the uterus during version has usually occurred when the operation was attempted long after the amniotic fluid had escaped, and continued uterine contractions had brought about the situation described by DeLee. Version performed

under such conditions would almost certainly bring about the very gravest consequences. This merely serves to emphasize the fact that the operation must at all times be done only *in properly selected cases.* For the year ending August 31, 1920, I personally attended 1,113 women in labor, 920 of whom were delivered by version. Of the 920 versions, 400 were primiparae and 520 were multiparae. Altogether, I have delivered by version and reported over 4,000 cases. The indications for the version varied widely, but "neglected transverse presentation with the uterus on the point of rupture" was not treated by version. This condition would not be found in the practice of an operator doing elective version, as the delivery would be completed before it could supervene. If called in consultation to such a case I would be guided in my procedure by the condition of the fetus. If the child were dead, an embryotomy would be indicated. If it were still alive, and complete relaxation of the maternal parts could be obtained under deep anesthesia, the cervix being fully dilated, version might be attempted. If the presenting head can be lifted above the brim of the pelvis, version can commonly be performed, but if the head be wedged in the pelvis and the waters completely drained away, version will be impossible.

With an undilated cervix and living child, abdominal cesarean section is indicated, the wisdom of performing it, however, depending upon the amount of vaginal manipulation already undertaken, and the presence of any contraindications.

In general the fact that the patient suffers little or no shock when delivered according to my method probably makes her more resistant to infection.

In regard to injury of the mother's soft parts, I can confidently assert that these injuries are not any more frequent when version is employed. An examination of my case records and observation of my patients, during and after the operation, has led several men to state that the obstetrical conditions are vastly superior to those obtained when forceps were used to effect delivery, and the postpartum condition of my patients is fully equal, if not indeed superior, to the condition of patients whose delivery was effected by the natural process alone. The perineum and soft parts of the mother are saved, first of all, by deep anesthesia; secondly, by having the patient in the modified Wal-

cher position, which gives one good control and admits of slow and safe delivery of the head after the vagina and perineum have been previously ironed out and properly dilated. When pressure is exerted upon the mother's abdomen great care is observed not to use much force, and, in this way, any injury to the anterior uterine wall or the bladder is avoided.

Bags are never employed in my work. Cervical dilatation is an absolute prerequisite to the performance of version; if it does not occur spontaneously it is induced in the manner previously described, by stretching the cervix very gently with the gloved fingers. I do not think that bags can bring about a dilatation in any way comparable to the natural process. The dilatation and retraction of the cervix, which leads to the desired obliteration, begins above and is not the same as that brought about by the use of bags. Bags also displace the presenting part and predispose to prolapsed arms.

Making sure that the soft parts are thoroughly dilated, added to the fact that they are not for a long time subjected to pressure, has eliminated from our practice the flabby, relaxed postpartum vagina, the torn perineum, and the prolapsed bladder. Moreover the long pressure and bruising caused by the on-coming head often lights up tender tubes and ovaries, where there is always the possibility of a latent gonorrheal infection. When version is done such trauma is avoided, and this, I believe, is one of the chief reasons why we so seldom get temperature in our confinement cases.

In my experience the laceration of the mother's soft parts during version and extraction, according to my method, is much less than after forceps deliveries, or that seen in labors where the second stage is greatly protracted. I have never torn the perineum through the sphincter and only rarely up to the levator, while injuries to the bladder do not occur because the bladder is always emptied before the version is begun, and lifted so high up that it is never even seen during the delivery; therefore it is not torn off from its pivotal point of attachment at the internal os, or from the descending rami of the pubes and ischium. Neither do we see cystocele nor rectocele; conditions often due to long pressure of the fetal head and undue stretching of the birth canal.

Many obstetricians rectify occipito-posterior positions by using forceps to rotate the head to the anterior position, and thereafter re-applying them to effect delivery. I have seen serious injuries to the mother's soft parts result from this method of rotation in persistent occipitoposterior positions. Some of these presentations, if let alone, would without doubt rotate spontaneously, but this means that labor will be many hours prolonged, with the consequent risk of injury and great increase of suffering.

I have been asked especially how I expected to avoid injury to the "upper pelvic diaphragm," which is so often traumatized in rapid natural labor, in early application of forceps, from an ill-advised administration of pituitrin, or by any manipulation which interferes with or hastens, the natural mechanism of dilatation. To this I can only reply that I do avoid it, and I believe the reason I am able to do so is that the patient is always deeply anesthetized so that all the muscles are thoroughly relaxed, and the employment of the modified Walcher position—which brings the patient's thighs close together—also helps in relaxing the soft parts; both conditions assisting in the avoidance of trauma to the birth canal. Many lacerations are the result of haste and nervousness on the part of the operator. I cannot too strongly emphasize the importance of being deliberate, careful, and above all, gentle in every step of the operation. When version is properly performed, the operator has at all times control over the position of the head, and if extreme flexion is consistently maintained—as it must be to insure satisfactory delivery—the head will do no damage in its descent, and ordinarily will pass more readily when it comes last, than in the more commonly-occurring "head first" position.

One of the questions most frequently asked me by those who have come to observe my procedure is: "Why don't you hasten delivery after the umbilicus can be seen?" By reference to the methods of procedure described in the earlier chapters, it will be observed that most text-books and other authorities especially emphasize the need of haste at this stage of extraction "lest the child perish." This is apparently a tradition handed down from the period when the fetus *in utero* was supposed to breathe through the cord, and is still consistently

taught in our medical schools, despite any contraindications which the advances in medical practice may offer to it.

As I have already stated, my experience has tended to show that haste at this period of extraction often greatly complicates delivery, and that it is always better at this stage to make use of the natural forcing powers. Shears, it will be remembered, lays great stress on the importance of auscultating the fetal heart for "signs of asphyxia" after version. With the child's chest resting on his hand, the operator should know the state of the fetal heart all the time, and with proper attention to the delivery of the arms, and the maintenance of extreme flexion of the head be able to arrive promptly at delivery of the mouth and nose, when the mucus may be expressed from the mouth and throat, if any has been sucked in by premature attempts at respiration. The rule that practice makes perfect applies to obstetrics as well as anything else. After doing many hundreds of extractions, an operator naturally acquires an amount of manual dexterity which enables him to complete delivery very promptly yet without undue haste. Other operators have asked me why I do not get cases where the arms are over the head, or the shoulders locked, conditions with which they are occasionally confronted. I believe this is because they push the head down between the shoulders, and this direction of the head causes the arms to rise, which naturally complicates matters by arm extension. Once the scapulae are fully out, the anterior arm delivered, the posterior arm rotated until it becomes anterior and can be so delivered, no difficulty should be experienced in the delivery of the head. Pressure should not be exerted from the outside until the head is actually passing through the pelvic canal; it is premature external pressure which tends to push the head down, allowing the arms to go up, and the chin to extend. I am sure that it is this pressure which makes the difficulties and dangers to the child which complicate other methods of version.

In any delivery, the principal dangers to the child are due, first, to a possible prolapsed cord, partial, complete or concealed; and secondly, to unduly prolonged pressure of the uterus upon the child, as in cases of faulty presentation, and borderline cases of contracted pelvis. I have found that in cases of

unusual difficulty the intelligent application of the forceps to the after-coming head will greatly reduce the chance of a bad outcome for the child. I only used forceps twice in my last nine hundred cases for the delivery of the after-coming head as shown in Figs. 41 and 42.

Fetal mortality is certainly no greater in my practice than that which is attendant upon other methods of delivery. Cord complications are always the greatest factor in fetal mortality. Many cases are not recognized on account of the concealed type

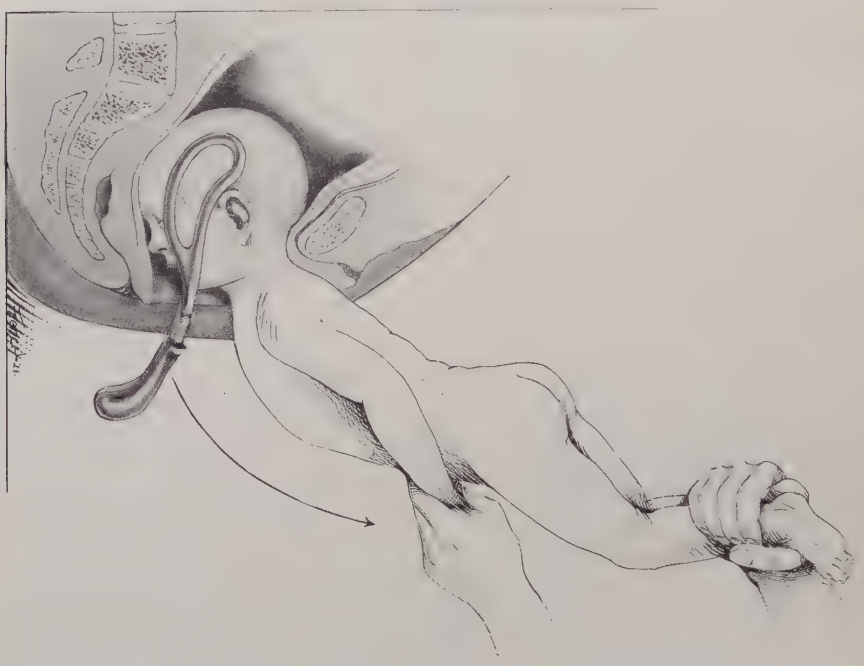

Fig. 41.—Side view of forceps applied to after-coming head.

of prolapsus funis, as when the cord is caught between the head and the brim of the pelvis, and the death of the fetus follows from pressure upon it. Version is undoubtedly the best method of dealing with cases of prolapsed cord, whether concealed or exposed. I often cut the cord before delivery, if it lies between the legs and cannot be brought down over the foot, or is twisted about the leg, or is very short, cutting it between two ligatures, and have never caused any injury to the child by so doing.

No feature of my technic has been more questioned than

the bringing down of both feet instead of one. The advantages of my method appear to me to be very obvious, the chief one being the more uniform distribution of the traction which the oper-

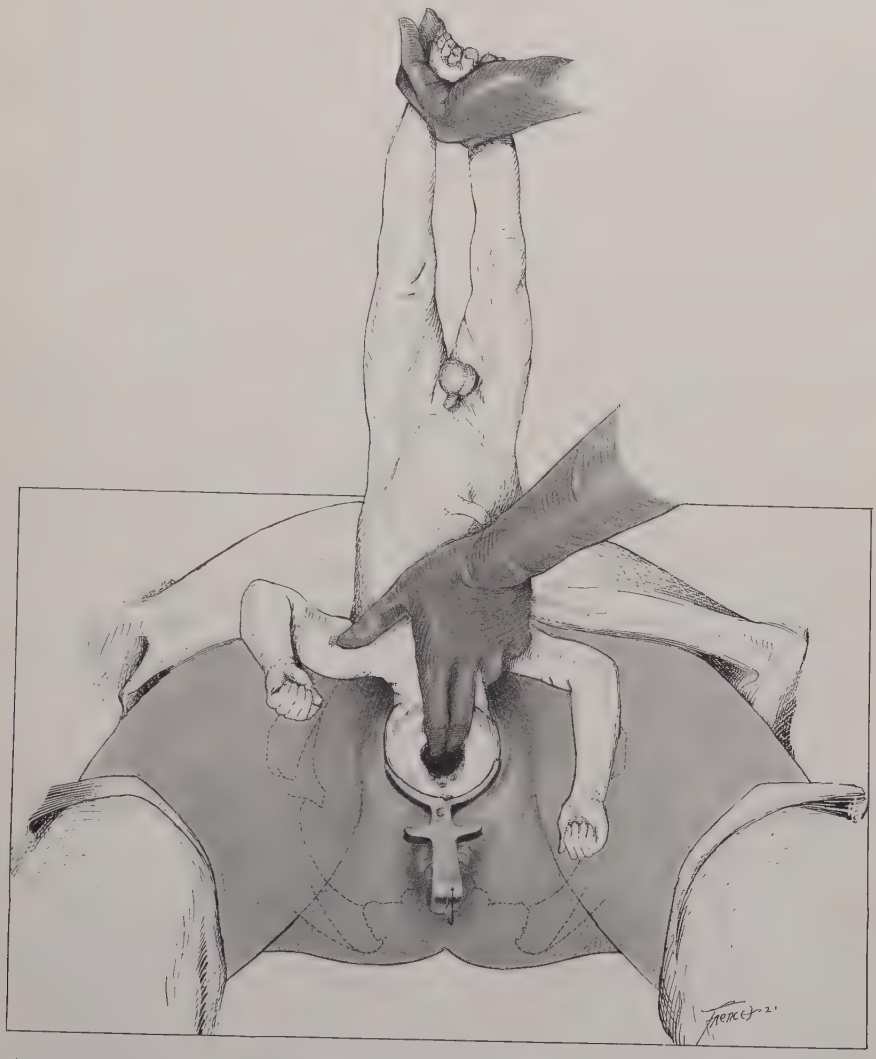

Fig. 42.—Forceps applied to aftercoming head. Exaggerated position of child for purposes of demonstration.

ator is able to exert when rotating the child's body, and the possibility of securing a better dilatation of the birth canal than can be obtained with one foot alone.

The advantages of working with both feet are peculiarly

well illustrated when one is called upon to bring a pair of twins into the world. When both heads present, I raise up the head of the first child and feel carefully for the feet of the second. The second child's feet are brought to the vulva and delivered, extraction of the remainder of the second child's body following the established technic. The first child is then turned and delivered in the same manner. In a case of twins both presenting breech, the legs are flexed by pressure in the popliteal spaces and the lower breech is raised out of the pelvis. The feet of the second child are then brought down to the vulva, and the extraction carried out as if there had been an original footling presentation. The other child is delivered in the same way. Under these conditions to attempt delivery by bringing down a single foot would only be courting failure, and in the general routine of obstetric work I have always found it better practice to grasp both feet before beginning to turn the child.

The most recent objection to my technic of version is that it is a "one-man" method, in other words that because of peculiar natural aptitude and extended experience and practice, I am able to accomplish the maneuver safely, while the attempts of other men to follow my directions, are sure to have a disastrous outcome.

It is somewhat difficult to answer a charge into which the personal equation so largely enters. No one is able to justly estimate his own attainments or to make a fair comparison of his abilities with those of some one else. Some of the opponents of my method of practice have justified their opposition by according very high praise to my skill as an accoucheur, and stating that it is just because of this a "dangerous procedure" for any one else to attempt and "must not be made light of, otherwise it will be undertaken by those not competent to perform it."

Putting aside all considerations of personal skill and special aptitude, it seems to me superfluous to point out that no operation—whether it be the extraction of a "sliver" or an intestinal anastomosis—should be undertaken by those not competent to perform it. The path of medical progress is encumbered by the failures resulting from the ill-judged efforts of just this class of incompetents. No operation should be "made light

of," and special preparation is required before any man can properly perform one.

As I have already asserted, the present method of teaching obstetrics is notably defective and although more attention has been given to it of late, there is still room for very extensive improvement. After the close of the Great War the medical men of Europe turned their thoughts from the problems of the battlefield to the even more pressing problem of replacing the millions of citizens whose lives their best efforts had been unable to preserve. A high rate of infant mortality became something more than a question for academic discussion; it bulked as large as a threatened Hun invasion, or the existence of a virulent epidemic.

Last year in London the Royal Society of Medicine held a symposium on the teaching of obstetrics and gynecology. The proceedings of this symposium are very interesting and illuminative reading. Every reporter agreed that the instruction in midwifery at present given to British medical students was inadequate in every respect; the only disagreement seems to have been as to the remedy for the existing deplorable conditions. And it is noteworthy that the session was closed without any final decision on the part of the Royal Medical Society.

It is altogether probable that the conditions in our own country are not much better, although their deficiencies have not—so far as I am aware—been so succinctly set forth. In his chairman's address before the Section on Obstetrics of the American Medical Association in June, 1921, John Osborn Polak stated that in New York City "one baby out of every twenty-one is born dead, and one out of twenty-six dies before it is a month old;" while "one woman in every 250 deliveries died from infection or as an indirect result of it;" moreover, "more than 61 per cent of all gynecologic surgery is a result of poor obstetric practice." And he asked the question "Why should the mortality from childbirth place the United States fourteenth on the list among sixteen leading civilized nations?"

Dr. Polak believes that our present obstetric teaching is defective. "There should be more uniformity in the teachings of the fundamentals of obstetrics and the principles that are generally accepted. Greater emphasis should be laid upon the re-

sponsibility of the obstetrician for the lives of both mother and child; and in order to turn out men who are even qualified to attend a primipara in labor, there must be greater clinical facilities for instruction of our students."

Barton Cooke Hirst has also pointed out the defects in obstetrical instruction in the United States, and outlined a plan of extension and improvement which, he remarks, "contrasts strikingly with the provincial American practice of the past." In the course of his article, he outlines the amount of clinical experience a student in his own university has in actual obstetric technic. "During a voluntary internship of two weeks" a student was able to observe "seven normal deliveries, an extraperitoneal cesarean section, transverse presentation with version, cesarean section for placenta previa, compound presentation with two feet, hand, occiput and prolapsed cord, a cesarean section for a monster, dicephalus tetrabrachius," and about an equal number of gynecological interventions. This same student also had an additional week of compulsory internship in the hospital; two weeks of voluntary and ten days of required service in the out-patient department; one year of theoretical lectures and another year of "clinics, conferences, section work and ward classes," the number of hours in a "year" not being stated. This is apparently put forward as a better-than-the-average training not only in general obstetric work, but inclusive of gynecological training as well.

It is not at all strange that the instructors in institutions where the present system of obstetric teaching prevails, should be indifferent, or more often actively opposed to any departures from the classic methods of managing labor, which presuppose exact knowledge of female pelvic anatomy, both normal and pathologic, and sufficient actual clinical experience to attain a reasonable amount of technical skill in the required mechanical maneuvers. The conviction that the students who are going out from their classrooms and clinics, are not properly equipped even "to attend a primipara in labor" may well make them hesitate to endorse any method requiring a thorough grounding in anatomy and technic.

I have been asked whether I advocate version as a routine for all sorts of practitioners. I do not advocate the employment

of version for any one who does not want to do it, or is afraid to try it because he realizes his own ignorance and lack of skill. I believe that a man properly trained in obstetrics should be able to do a version just as well as a cesarean section, but no one can do either without a due amount of training and practice. One man who came and observed my procedure did a hundred and fifty of these versions during the year following, and experienced no difficulties. Another reported that he had done one hundred and twenty-one. A number of other men are employing the technic successfully in their practice. Others who consider my procedure too radical, when followed throughout, have adopted certain features of it, which they have combined with their own methods of delivery, and have reported that in the cases to which these methods were applied there was less maternal suffering and trauma and a reduction in the duration of labor. One man who observed my work and thereafter applied my methods in his own practice took especial pains to watch and record the results obtained by his assistant, and the fourth-year medical students who undertook deliveries as a part of their regular instruction in obstetrics. He went to the trouble of publishing these reports, appending to them the conclusion that "the Potter version can be taught to students. It is easier to teach than the use of forceps."

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## CHAPTER VI

## INDICATIONS AND ADVANTAGES OF VERSION

In advocating any method of obstetrical interference one must always bear in mind the maternal and fetal mortality and morbidity attendant upon it; and its practice can be justified only by proving that these figures are no larger under the advocated conditions, than under those that customarily prevail. In June, 1919, I reported a series of 1888 cases of delivery without a maternal death. There were no serious injuries to the mother's soft parts, all those occurring being readily and simply repaired; neither were there any alarming hemorrhages. The period of involution in these cases was shorter than in those where the more conservative methods of delivery had been employed, with less lochial discharge during the lying-in period. The rapidity of convalescence, I believe, was due to the elimination of the shock undergone by patients who are called upon to endure the protracted anguish of a long second stage of labor. There was also greater strength and a sense of general well-being at the end of the puerperium, and the hospital patients returned to their homes happy and well-satisfied.

The fetal mortality, I believe, compares favorably with that in any other form of delivery, or in the practice of any other obstetric specialist. I say *believe* because I have found such wide variation in the figures of other practitioners and hospital services that I have been unable to obtain a basis for exact comparison. In the discussions following presentation of my reports to the profession it has been asserted that some had a fetal mortality of only three per cent. To any man, or group of men, who can show a fetal mortality of only three per cent, extending over a period of five years or more, I offer my most hearty and sincere congratulations. "Infant mortality" can be little more than an empty phrase in their localities. In general, the records of death of the fetus and the newly born infant are not compiled according to any accepted plan, so that one is not able to deter-

mine, with any degree of exactitude, whether or not death was due to the method of delivery employed, or whether it could have been prevented by some other way of handling the case. In my series of cases reported in 1918 I had sixteen stillbirths in 515 cases, a fetal mortality of a trifle over three per cent. But in my series of 1113 cases presented in 1920 I noted, not only stillbirths, but deaths, occurring among the newly born up to the age of fourteen days, and the occurrence of nine twin births, so that my fetal mortality for this series was 6.7 per cent, more than double that of the earlier report. This shows how—without any attempt to deceive—percentages may vary greatly. In the printed report of the discussion of this latter paper two of the speakers are reported as stating that my fetal mortality was "about eight per cent." Of course we are not all of us equally proficient in mental arithmetic.

The time to do a version depends upon the physical characteristics of the patient, the extent of the cervical dilatation and the condition of the fetus. Most women having normal pelvic measurements can be delivered of a living child as soon as the cervix is completely dilated. In dealing with a multipara I do this as a routine in all abnormal head presentations, thereby eliminating many of the bad effects resultant upon a protracted second stage. In all cases of labor there is a certain amount of shock, even if it be very slight, and if we can in large measure eliminate pain by bringing about an early delivery, we conserve our patient's strength, making no drain upon her energy reserve, so she recovers quicker and is more willing to increase the size of her family. The fear of future pregnancies is due especially to dread of the prolonged second stage of labor, so, if this can be shortened without danger to either mother or child, maternity is not so likely to be unwelcome and avoided.

Version early in labor eliminates those injuries due to resistance from below and brought about by the long continuance of labor with the constant driving force being brought to bear from above; as in shoulder presentations, persistent posterior positions of the occiput, and cases of prolapsed cord. Not only do we get less trauma of the mother's soft tissues, but the chance of injury to the child's head is also lessened by shortening of the time the head is compressed in the pelvis.

Thus, we see that the advantages of employing version fall into two classes, those to the mother, and those to the child.

It is usually asserted that greater danger attends the performance of version in a primipara, than in those patients who have already passed through several pregnancies. In my experience the mere fact that the patient is being delivered for the first time should not be a bar to doing version. Many uteri are just as large when gravid for the first time, as in any succeeding pregnancy. In delivering a primipara, it is not trauma to the upper birth canal which we so much fear; the problem is to overcome the rigidity of the lower passage, and this—as has been already demonstrated—can in large measure be effected by properly applied manual dilatation.

A type of case where version has proved of especial advantage, is that in which we have absolute or partial cessation of the pains when dilatation of the os is more or less complete. We frequently encounter these cases unassociated with any abnormality in the position of the child, or any contraction or malformation of the pelvis; the progress of labor being retarded solely by uterine inertia. We recognize the existence of the uterus which has little or no driving force, the contractions of which are never powerful, or frequent enough to be efficient, and the general muscular tone of which is far below normal. We see this type of uterus in both primiparae and multiparae, but more commonly in women who have already borne several children. This is probably because certain changes take place in the uterine muscle after each pregnancy which lessen the expulsive power. In a case of this type we should not delay too long, because the patient soon becomes exhausted, and waiting reduces the chance of delivering a living child.

Another type of case in which version is an advantage is when the patient has a pendulous abdomen. In such cases an early version is indicated if the pelvic measurements are not too greatly reduced, because the exertion of uterine force is not in the direction of the axis of the birth canal, and labor is inevitably prolonged when the patient is left to her own resources. In a series of five hundred cases I had twelve in which version was done because of a very pendulous abdomen. In others, the maneuver was employed because of marked relaxation and separa-

tion of the recti muscles, but in the twelve especially referred to the pronounced pendulous belly was the chief indication. I also advocate version when a patient has large varicose veins of the vulva, vagina and thighs, because in these regions there is always danger of hematoma, the veins being apt to break down and become infected during prolonged labor, thus causing serious puerperal complications.

Version is of advantage in cases of moderately contracted pelvis. Here we often have protracted labor—particularly in those borderline cases where a cesarean is not indicated but it is none the less imperative that something be done to cut short the period of labor. As a rule, version under these conditions is not more difficult than it is in a normal pelvis, and by an early delivery we eliminate the obstetrical shock and the bruising of the soft parts which so often pave the way for the entrance of infection.

My experience has shown that the advantages which version offers to the child are not less great than those to the mother. Especially is this true when we are confronted by anomalies in the implantation of the placenta, unnatural positions of the fetus, or variations in the location and presentation of the umbilical cord.

When placenta previa marginalis is encountered in multiparae it can always be best treated by version. If the os is not sufficiently dilated, this can be accomplished under deep anesthesia by means of the technic already outlined for manual dilatation. Both feet are then brought down and the child promptly delivered. I wish to emphasize especially the advantages of bringing down both feet in such cases, not depending upon a single foot to "plug the cervix." Labor should never be permitted to drag along after a diagnosis of placenta previa has once been made. The only cases which cannot be satisfactorily delivered by version are occasionally primiparae with an undilated cervix, or where there is a complete placenta previa. Under these circumstances, cesarean section is likely to give a better result. We cannot always estimate the amount of bleeding, because we so often encounter concealed hemorrhage. This only serves to accentuate the importance of prompt operative interference just as soon as the diagnosis has been made.

More than half the cases where version is performed are those where some malposition of the child is encountered. An early diagnosis of this condition should be made; if necessary an anesthetic may be administered to determine the exact position of the fetus. A criticism of my reports—very often made—has been the frequency with which I allege that I find left occipitoposterior positions. The only reason I find these positions more often is that I am accustomed to make an earlier and more careful examination than is usually regarded as amply sufficient by the majority of those practicing obstetrics. I pay no attention to the sutures or fontanelles; this is because I do not think an accurate diagnosis can be based upon these landmarks as overlapping practically always takes place. I depend entirely upon the ear, for the ear is always on the side of the head. However, even in this I use the greatest care, as it not infrequently happens that the ear may be folded upon itself. In extensive caput succedaneum this is absolutely the only sure way of ascertaining the fetal position.

Another condition which causes prolonged labor, but a reason very frequently overlooked, is that in which the hand presents beside the head. Here rotation is sure to be slow and incomplete, for the head will never present properly if left to rotate spontaneously. Still other malpositions for which version may be advantageously performed, are shoulder presentations, face presentation with chin anterior or posterior; transverse presentations; cases with both hands presenting; and those where one hand and the cord are in presentation.

In general I believe version is of advantage to the child in any case where there is likelihood of the labor being prolonged. There is much less chance of compression injuries to the baby's head than is the case in a long and tedious labor; this is especially true if it is necessary to use high or medium forceps. Therefore, epilepsy and other cranial complications should be less common among children brought into the world by this method than after ordinary deliveries.

## CHAPTER VII

## CONCLUSION

The first paper describing my method of version was read in Indianapolis at a meeting of the American Association of Obstetricians and Gynecologists, but was not published in the Transactions of the Society, because the Council objected to my practice. In this paper I reported five hundred cases of version without a maternal death. There were fifty-seven stillbirths, the greatest number of deaths being due to prolapse of the cord, both concealed and exposed, of which there were thirty cases. In eight of the cases there was a macerated fetus due to syphilis. Eclampsia and short cord caused eight fetal deaths and in three cases the cause was unknown.

The next year at a meeting of the same Society in Newark, N. J., I read a paper on two hundred versions accompanied by all my charts and nurses' records, as my statistics had been challenged at the previous meeting by members of the Society. The results reported will be found in the following extract from the paper:

From September 1, 1916, to August 31, 1917, I have delivered 515 cases, a series in which version was performed, for various reasons, 200 times. Adding these cases to the 500 cases reported last year, I now have 700 versions to my credit. Approximately 50 per cent of the last 200 versions were hospital cases. There was no maternal mortality in this last series; and, if you remember, none in my first 500 cases of version.

Of the series of 200 versions eighty-five were performed in primipara, and 115 in multipara. Forty of these were seen in consultation with physicians, and thirteen were in the care of midwives. One hundred and twenty-six cases were left occipitoposterior positions of the vertex. Forty were of the right occipitoposterior variety. Three times version was performed when the occiput was to the left and anterior, and five times when it was to the right and anterior. Version was performed in

these cases in preference to the use of forceps. Of face presentation, mentoposterior position, there were three cases; shoulder presentation, one case; transverse presentation, one case; mentoanterior position, one case; central placenta previa, four cases in multipara with the os dilated or dilatable; lateral placenta, one case; prolapsed cord, fifteen cases of which six were complete, and nine were of the concealed variety. In fifteen cases the cord was around the child's neck once; in six cases, twice; in one case, five times, and the child lived. In two cases the cord was tightly stretched between the legs, and had to be cut before delivery could be accomplished. Both children lived. The cord was around the neck, and between the legs, in two cases; twice around the neck and right arm, in one case; three times around the neck and between the legs, in one case, and short cord occurred once.

Instruments were applied to the after-coming head, ten times. In the last series, there were three cases in which it was necessary to repair the perineum; each case required two silkworm sutures, and in each of these three cases the forceps were used on the after-coming head. In one of these cases, a primipara, thirty-one years of age, the baby weighed 9 ¾ pounds; in another, a primipara, twenty-eight years old, the child weighed 9 pounds; in the third, a primipara, thirty years old, the child weighed 11 pounds. All the children were born alive.

There were sixteen stillborn children, of whom one was a hydrocephalus, requiring craniotomy on the after-coming head. In two cases the fetus was macerated, having been dead for some time. The cause of the death was unknown. There were two stillborn children in the placenta previa cases, and one stillborn in the mentoposterior position. In this case no fetal heart sounds could be heard before the version. One stillbirth was due to short cord, and one was the result of disproportion between the child and the pelvis. This was really a case for abdominal cesarean section. The remaining eight stillbirths were due to prolapsed cord, two of which belonged to the complete and six to the concealed variety. Ten of these sixteen stillbirths were consultation cases, six of them in the hands of midwives, and four in the care of physicians.

At Atlantic City in September, 1920, I reported that for the

year ending August 31, 1920, I had personally delivered 1113 women, 920 of them by version. Of the 920 versions, 400 were upon primiparae and 520 upon multiparae. There were in the total number of cases:

80 abdominal cesarean sections
13 footlings
22 breech cases
2 vaginal cesarean sections
39 instrumental deliveries
2 cases were delivered by instruments on the after-coming head, following version
There were 9 cases of twins
12 of these 1113 cases delivered themselves before I got to them
There were 10 cases that were delivered as ordinary vertex cases
There were 3 face cases—2 with the chin anterior and 1 with chin posterior. It was necessary to do a craniotomy in one case for hydrocephalus.
There were 41 stillborn children, classified as follows:
Breech—2
Short cord—2
Hydrocephalus—3 (1 of which required craniotomy)
Prolonged labor, faulty presentation (Persistent L. O. P., no fetal heart sound heard, seen in consultation, child dead before delivery)—1
Exposed prolapsed cord, no pulsations felt in cord—5
Hydrocephalus with spina bifida—1
Face presentation and prolapsed cord—1
Twins, premature, 4 months—1
Disproportion between child and pelvis—3 cases (each child weighed 10 pounds). This I feel was an error of judgment on my part. I should have done a cesarean section in each case.
Eclampsia—1. Patient had a number of convulsions during 24 hours before delivery and was very toxic.
Macerated fetus, specific—1.
Macerated fetus, where no evidences of syphilis were found—6

Monsters, anencephalic type—5
Cord around legs and arm—1
Persistent albuminuria of mother—1
Persistent L. O. P. seen in consultation—1
Placenta previa—7 mos.—1
Fibroid tumor complicating labor, child showing effects of severe loss of blood—1.
Brow case—1
Marginal placenta previa at term, severe hemorrhage—1
Diabetes in mother—1
Faulty position of head at term, seen in consultation. Forceps had been applied. Child dead—1

Of the complications, those having to do with the cord were most numerous, and seem to bear out my statement made previously, that cord complications are the cause of the majority of our stillborn children.

There were 16 prolapsed cords
10 short cords
Complete knots were found in three cases
Twisted cord was found in 2 cases
The cord was around the neck
once in 37 cases
twice in 13 cases
three times in 3 cases
four times in one case
six times in 1 case with a living child
once around neck and between the legs 4 times
twice around neck and between the legs 2 times, cord between the legs necessitating cutting before delivery, 5 times.
Cord around both legs once.
There was one case of loose placenta and one of adherent placenta
Marginal placenta previa—7 cases
Central placenta previa—2 cases
The largest baby was 12½ pounds. One also weighed 12 pounds, 1 ounce.
There were thirty-four children who died in hospital before

being discharged, or inside of 14 days from birth classified as follows:

1 congenital syphilis, aged 8 days
12 convulsions, from 36 to 72 hours
1 congenital malformation of heart (blue baby)
1 hemorrhage into and rupture of suprarenal gland—found by autopsy 4 days after birth.
1 cause of death unknown
10 were bleeders, living from 2 to 6 days
5 inanition, living from 1 to 3 days (all were premature from 5 to 7 mos.)
3 monsters, living from 2 to 3 days

Two mothers died who had been delivered by version.

One, a poorly nourished patient, sick with colitis and running a temperature for a week before delivery, living 41 days, dying from the effects of her colitis which she had had for years. Blood cultures, three weeks following delivery, were sterile.

The second case was up and around the hospital ready to leave when she developed lobar pneumonia, involving lower lobe of right lung, spreading to the left lung, dying from a double pneumonia four weeks following delivery. She was an old influenza case.

Last report for year ending Angust 31, 1921.

| | | |
|---|---|---|
| Number patients delivered | | 1130 |
| Abdominal cesarean section | 100 | |
| Breech | 29 | |
| Instrumental vertex | 25 | |
| Footling | 11 | |
| Transverse or complex presentations treated by version | 4 | |
| Vertex L. O. A. | 9 | |
| Spontaneous (delivered themselves) | 9 | |
| Instruments on after-coming head following version | 2 | |
| Face (treated by version) | 3 | |
| Twins (5 pair treated by version) | 10 | |
| Craniotomy | 4 | |
| | 206 | |
| (14 of these 206 were versions as stated above) | | |
| Versions | 938 | |

Six children were known to be alive when delivery was attempted. Sixteen children died before leaving hospital at end of two weeks, making a fetal mortality for version of .023.

It has been my endeavor to point out how version, performed under the proper conditions, is an operation presenting great advantages to the mother, the child and the attending obstetrician. It lessens shock by shortening labor, it conserves the patient's strength and does away with injuries to the baby's head. We cannot disregard the fact that prolonged application of the forceps is followed by results immediately injurious to the mother, and more remotely harmful to the child.

Version should not be undertaken until the cervix is fully dilated or easily dilatable, it should not be done in a flat pelvis, or where there is a marked disproportion between the size of the child and the pelvic diameters.

Version will be found especially useful in occipitoposterior positions, in face presentations, in prolapsus funis, in placenta previa occurring in multiparae, and in a moderately contracted pelvis with a small fetus. Used in all cases where there are indications of prolonged labor under natural conditions, it does away with unnecessary suffering and exhaustion of the mother and lessens the chance of injury to the soft tissues. Fetal mortality is certainly no greater than in the ordinary manner of effecting delivery and the newly born infant is never roughly handled in order to induce respiration. This latter point I wish to emphasize especially.

During the past five years, when my method of practice has been constantly under observation and open to criticism, I have continued to employ version with ever increasing frequency. My results are known to all who wish to inspect my records and case reports, both in hospital and private practice, and I do not hesitate to state that they compare favorably with those of any other obstetrician, wheresoever he may be located. Five years ago my theory was practically without support from any branch of the medical profession. Today a large number of practitioners are employing my technic and giving their endorsement to a procedure which gives them such satisfactory results. It has been demonstrated that any capable and properly-trained man can

carry out the maneuver without difficulty, and with satisfaction to the patient, her family and himself.

I believe that the shortening of the much-dreaded second stage of labor will do more than any other single influence to lessen the fear of childbirth now so universal among mothers, and will result in a higher birth rate in that class of society upon which the well-being and continuance of our state rests. It has been demonstrated over and over again that it is the more intelligent and far-seeing part of the population which constantly tends to die out; that the women of this class avoid motherhood and curtail the size of their families because they count the economic loss which invalidism connected with childbirth so frequently puts upon them. If you question the intelligent parents of an unusually large family you will practically always find that the mother has a "very easy time" at her confinements. Assure the general run of mothers of a similar condition and it cannot fail to result in larger and healthier families.

Constant study and experimentation are going forward to encourage the breeding of better hogs, to improve the grading of cotton, to make two blades of wheat grow where only one grew before. But the crop gathered by the doctor with the obstetrical bag is infinitely more important than wheat or cotton or hogs, and any effort toward the production of more babies and better ones, should certainly not be condemned without a trial.

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